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WAYS IN WHICH EMOTION CAN AFFECT THE DIGESTIVE TRACT *

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It is strange how easily satisfied we physicians often are with a few words that mean little. Here we are day after day and often several times a day diagnosing "nervous indigestion" and yet what do most of us really know about the ways in which a tired brain can produce distress in the abdomen? What would we say if a patient were to ask us to explain just how emotion was affecting his digestive tract; I mean a patient so intelligent and pertinacious that he could not be put off with a few vague remarks about the sympathetics and parasympathetics? We might turn for help to the physiologists, but soon we would learn their limitations. As can be seen from a perusal of the following notes, they can tell us many interesting things about emotion and gastric digestion; but when we get off onto the subject of emotion and hepatic and intestinal function, their ignorance becomes abysmal.

PSYCHIC STIMULATION OF TONE AND ACTIVITY, WITH REPORT OF EXPERIMENTS

My interest in the problem dates back fifteen years to a day when I happened to be studying the intestinal movements of a man with a fistula into the first portion of the jejunum. A small balloon, connected by rubber tubing to a tambour, was passed into the bowel and with it I was able to get records of any activity that was present. As I sat by the bedside watching the record unroll itself on a smoked drum, I noticed a sudden rise in the level of the tracing and an increase in the amplitude of the rhythmic contractions, and looking about for some possible cause, I heard the rumble of the steam table as it came down the hall with the patient's luncheon. He was hungry and had heard it first. This sudden change in the amplitude of the intestinal contractions, coincident with the arrival of luncheon, was observed on two other occasions; but it was then not so striking, perhaps because the man knew that I was watching for it, and the whole procedure bored him.

Further evidence of the influence of emotion on the bowel was seen in the fact that peristalsis was more active when the man sat up and fed himself than when I made him lie quiet and got a nurse to feed him. Although the nurse was not unattractive, something about her ministrations annoyed him and took away much of his pleasure in eating.

Shortly afterward I studied another man with an opening into the jejunum, and one day, as I was questioning him about his favorite foods, there was an increase in intestinal activity. This may, however, have been a coincidence because on two other days a similar discussion failed to produce any increase in tone or rhythmic activity. I then studied a woman with a large ventral hernia; as the bowel was covered only by peritoneum and skin, the contractions could easily be seen. One day when for some time there had been no rhythmic movements, the nurse appeared with luncheon and within a few seconds I saw a peristaltic wave rushing down the bowel, to be followed immediately by an increase in the activity of the kneading movements. The next day when luncheon was about due I again tried to stimulate the bowel by talking to the woman about food, but I did not see signs of any increase in activity. This may have been due to the fact that she had no appetite and took little interest in her meals.

The most striking evidence of a psychic increase in tone and activity was seen in a jolly bon-vivant whose anal sphincters had been destroyed by a series of operations for fistulas. As a result, many of the rush waves down the bowel, instead of stopping as they normally do at the ileocecal sphincter or somewhere in the colon, ran on and produced a bowel movement. The interesting point is that in this man the sight and smell and even thought of food produced rushes. They were most annoying at breakfast time, when after the night's rest the bowel was most sensitive, and as a result he had to eat his breakfast seated on the toilet bowl. Ordinarily, except for mealtimes, he had little difficulty unless, perhaps, when passing a restaurant he happened to catch an appetizing whiff of food, or unless some practical joker among his cronies, knowing his infirmity, began to discuss before him the relative merits of Hungarian goulash and beefsteak and onions. He knew the site of every restaurant in town and never passed near one if he could help it. His case reminded me of one described by Macewen [1] in which the patient had one of those terribly trying fistulas of Stenson's duct which allow saliva to run down over the face. This man begged all his friends, as they loved him, never to mention food in his presence.

One is reminded also of what Osler once said, that the comedy of life is often spread before us "and nobody laughs more often than the doctor at the pranks Puck plays upon the Titanias and the Bottoms among his patients." Perhaps the cruelest such prank that I ever saw had as its butt a young woman who consulted me about an infirmity which threatened to interfere with her ever finding a mate. In her the slightest sign

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1. Macewen, William: The Function of the Caecum and Appendix, Lancet 2: 995-1000, 1904.

of affection on the part of a young man so increased the tone and activity of the digestive tract that she was promptly summoned away by a call of nature so imperative that it could not be denied; she had to flee precipitately just when she would most like to have remained.

The purging effect of fear or anxiety is, of course, well known. Many sensitive persons suffer from looseness of the bowels for a day or so before even so mild an adventure as a railway journey, and some constipated persons have told me that they know their bowels would move normally if only they could get the right amount of excitement out of life; a certain amount causes constipation and too much causes diarrhea. Constipated persons have told me also that only the meals that are eaten with pleasure and in good company are likely to be followed by a normal bowel movement.

Koehler in his book on the mentality of apes tells how the sight of a "teddy bear" so frightened his chimpanzees that they were immediately and thoroughly purged. Hatcher and Weiss [2] have discovered a remarkable spot in the brain where the experimental application of tiny doses of certain drugs will cause defecation, and it may be that some of the misery of those nervous persons who are constantly aware of the presence of an irritable colon is due to an oversensitiveness of this and other centers in brain and cord.

Recent work by Cannon,[3] Cannon and Britton,[4] and Bard [5] has shown that there are centers for the emotions in the midbrain; centers which ordinarily are held under restraint by the cortex. When such restraint is removed, as by decerebration, or in man by a small dose of some anesthetic, such as ether or alcohol, emotions of pleasure or grief or rage are likely to get out of hand and to control the behavior of the individual. Suggestive also is the fact that a number of cases have now been observed in which lesions in the thalamic region of the brain produced a remarkable hypersensitiveness of one or more parts of the body.[6]

Ever since the day following the earthquake and fire in San Francisco when I saw a poor girl thrashing about in the convulsions of hysteria and acting for all the world like a chicken with its head just cut off, it has seemed to me that much of the distressing hypersensitiveness of nervous men and women must be due to a loss of cerebral control over centers situated lower down in the brain and cord. Just as the higher centers are the first to fail under the influence of drugs, so they might well be the first to fail under the influence of overwork, worry, loss of sleep, and all the other producers of fatigue.

For the same reason any agency that interferes with the metabolic processes in the intestinal tract is likely to injure the highly sensitive and active duodenum more than it does the less sensitive and more sluggish ileum.[7] The result might well be a flattening of the gradient of irritability and force that probably determines the direction of peristalsis, and with this there is likely to be a loss of appetite and a tendency to reverse peristalsis with its attendant nausea and vomiting.[8]

At first thought one would expect an increase in the irritability of the digestive tract to result in diarrhea, whereas actually constipation is the rule. A possible explanation is that the sphincters at the two ends of the stomach and of the colon, which I have reason to believe are normally more sensitive than the rest of the tract,[8] become so irritable and tonic that they cramp down and interfere with the progress of food and its residues. This explanation is supported by the fact that there are a number of nervous, unduly irritable women who suffer from spasm of every sphincter in the body. They have perhaps pharyngospasm with globus; slight spasm at the cardia; spasm at the pylorus, causing delay in the emptying of the stomach; spasm at the ileocecal sphincter causing delay in the emptying of the ileum and sometimes a sort of hunger pain; spasm of the anal sphincters causing constipation, and spasm of the muscles about the vulva causing dyspareunia and irritability of the bladder. Constipation is commonly of nervous origin; it is often associated with an extreme tonicity of the anal sphincters, and this I believe is part of the general tenseness of the muscles which is seen in nervous, hypersensitive persons.

PREVIOUS OBSERVATIONS ON PSYCHIC TONE IN THE DIGESTIVE TRACT

Hunting through the literature for observations similar to mine on patients with fistulas, I found that in 1911 Cannon [9] had prophesied the existence of psychic tone. "Since a tonic state is necessary for gastric peristalsis and since peristalsis does not appear if the vagi are cut shortly before food is eaten, the inference is that just as there is psychic secretion so also there is psychic tonus." So far as Cannon knew at that time no one had directly observed the phenomenon. Actually, more than a hundred years ago, a layman, Brillat-Savarin,[10] writing on the art of enjoying food, described with uncanny prescience what goes on in a man waiting eagerly for his dinner. "Memory recalls foods that have flattered its taste: imagination fancies that it sees them, . . . the whole nutritive apparatus is moved. The stomach becomes sensible, the gastric juices are moved and displace themselves with noise, the mouth becomes moist and all the digestive powers are under arms, like soldiers waiting the word of command. After a few moments there will be spasmodic motion, pain, and hunger."

This influence of emotion on the motor functions of the digestive tract with the resultant gurgling and loosening of the bowels must have been observed by primitive peoples and probably accounts for their tendency to locate the soul in the abdomen. Even today we unconsciously endorse this idea when we complain that some one "hasn't the guts" to do what he should do.

Somewhat similar to my observations on one of the men with a fistula were those of Takahashi,[11] who found that if he fed cats with a spoon the stomach emptied slowly, whereas if he allowed them to eat by themselves it emptied more rapidly. Similarly Hurst,[12]

2. Hatcher, R. A., and Weiss, Soma: Further Observations on the Seat of the Emetic Action of the Digitalis Bodies, Proc. Soc. Exper. Biol. & Med. **19:** 7-8, 1921.

3. Cannon, W. B.: The Mechanism of Emotional Disturbance of Bodily Functions, New England J. Med. **198:** 877-884 (June 14) 1928.

4. Cannon, W. B., and Britton, S. W.: Studies on the Conditions of Activity in Endocrine Glands: XV. Pseudaffective Medulliadrenal Secretion, Am. J. Physiol. **72:** 283-294 (April) 1925.

5. Bard, Philip: A Diencephalic Mechanism for the Expression of Rage, with Special Reference to the Sympathetic Nervous System, Am. J. Physiol. **84:** 490-515 (April) 1928.

6. Head, Henry; and others: Studies in Neurology, London, H. Frowde **2:** 364-374, 1920. Cannon (footnote 3).

7. Alvarez, W. C., and Starkweather, Esther: XI. The Metabolic Gradient Underlying Intestinal Peristalsis, Am. J. Physiol. **46:** 186-208 (June) 1918.

8. Alvarez, W. C.: The Mechanics of the Digestive Tract, ed. 2, New York, Paul B. Hoeber, Inc., 1928.

9. Cannon, W. B.: The Importance of Tonus for the Movements of the Alimentary Canal, Arch. Int. Med. **8:** 417-426 (Oct.) 1911; The Mechanical Factors of Digestion, London, Edward Arnold, 1911.

10. Brillat-Savarin, Anthelme: The Physiology of Taste, translated by F. Robinson, Philadelphia, Lindsay and Blakiston, 1854.

11. Takahashi, Makoto: Die Abhängigkeit der Magenentleerung vom Allgemeinzustand des Nervensystems, Arch. f. d. ges. Physiol. **159:** 389-392, 1914.

12. Hurst, A. F.: Common Fallacies in the X-Ray Diagnosis of Disorders of the Alimentary Canal, Arch. Roentg. Ray. **17:** 216-219, 1912.

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Gilmer,[13] Sailer,[14] and Haudek and Stigler[15] found that a barium meal left the stomach more rapidly if it was made somewhat palatable. They agreed with Biernacki[16] that food given by stomach tube leaves more slowly than when it is eaten in the usual way. Best and Cohnheim[17] found in dogs that sham drinking caused the stomach to empty more rapidly than it ordinarily did in dogs with esophageal and gastric fistulas; and Bickel[18] and Ivy[19] have made similar observations. According to Cohnheim and Dreyfus,[20] the stomach emptied with big spurts (through a duodenal fistula) when a thirsty dog was shown water or food.

Carlson and Luckhardt[21] noticed in a dog that the sight and smell of food initiated contractions in the esophagus, and von Benczur,[22] while working with dogs with a loop of bowel transplanted under the skin of the abdomen, noticed that the intestine became more active when the animals caught sight of food. This observation was confirmed by Borchardt,[23] who worked with similar loops. He found it difficult to interpret rises in the tone levels of the records from such loops because the slightest stimulus that the dog might associate with the coming of food was likely to cause a rise. Similarly Katsch,[24] while working with a rabbit in which part of the abdominal wall was replaced by a celluloid window, noticed that when he showed the animal a carrot and then let it eat, the whole digestive tract immediately became active. Later the rabbit came so to associate its presence in the laboratory with feeding that as soon as it came into the room the bowel became active. Somewhat similar observations were made years ago by Cash,[25] who, while working with dogs with a Vella loop, found that the smell of food increased the rate of travel of material through the bowel. According to Hannes,[26] the ileocecal sphincter, ordinarily relaxed during periods of starvation, tightens not only when food is eaten but also when it is seen and desired.

Hurst and Newton[27] were one day watching with the roentgenoscope the bismuth-filled ileum of a woman when some food was brought into the room and, probably on account of an increase in the tone of the muscle, the lower small intestine promptly emptied its contents into the colon. A most extensive search for signs of emotional influence on the tone and activity of the stomach and intestine of man was made by Brunswick,[28] but few positive results were obtained. Records made with balloons in stomach and rectum showed little, probably because the subjects knew that it was all a game and therefore were unable to experience any real fright or worry. It is one thing for a girl to try to be frightened at an imitation snake in a laboratory and quite another to see by the papers that her fiancé has eloped with another woman.

Danielopolu and Carniol[29] put a recording balloon into the stomach of a hungry man, and after waiting for a while to get a base line, brought a breakfast into the room and allowed another man to eat it. After a latent period of five minutes the empty stomach of the first man became active. Sinelnikoff[30] has described the interesting case of a woman with an artificial esophagus made from a loop of small bowel transplanted under the skin of the thorax. When this loop was active, harsh words stopped the movements for several minutes.

EMOTIONAL INHIBITION OF PERISTALSIS

It has long been known even to the layman that disgust, excitement, fear, anxiety, anger, fatigue, pain or injury will stop or reverse the movements of the digestive tract. A child who has suffered injury or severe fright shortly after a meal will often, after several hours, return the food quite unchanged. I remember once examining a neurotic young man with the fluoroscope and finding every bit of the barium meal eaten six hours before still in the stomach. There were no symptoms or signs of organic disease, so I began inquiring and learned that all that day he had been much upset over a political row in his lodge which that very evening was to be fought to a finish. Later, when he was calm, the stomach emptied perfectly. Miller and his associates[31] reported similar observations on students worrying over an examination, and Cohnheim[32] and Carnot[33] found while studying dogs with duodenal fistulas that the slightest uneasiness, excitement or fear would immediately close the pylorus and keep it closed for some time.

When, in 1896, Cannon[34] began his classic experiments on animals, he discovered that the slightest uneasiness, discomfort or anger experienced by the animal would immediately stop all movement in stomach and bowel. For this reason he had to use elderly female cats, well used to handling and with pleasant dispositions: old tabbies that would lie quietly under the screen and purr. Similar observations on various animals have since been made by many physiologists and it is now known that much of such inhibition can be avoided by cutting the splanchnic nerves. Some of it travels also through the vagi.

13. Gilmer: Abstr., Zentralbl. f. Röntgenstrahlen **2:** 235, 1911.
14. Worden, C. B.; Sailer, Joseph; Pancoast, H. K., and Davis, G. G. A.: A Clinical Study of Gastroptosis, with Special Reference to the Value of the Bismuth Skiagraph Shadow in Determining the Topography of the Gastro-Intestinal Tract, Univ. Pennsylvania M. Bull. **19:** 122-141, 1906.
15. Haudek, Martin; and Stigler, Robert: Radiologische Untersuchungen über den Zusammenhang zwischen Austreibungszeit des normalen Magens und Hungergefühl, Arch. f. d. ges. Physiol. **133:** 145-160, 1910.
16. Biernacki, E.: Die Bedeutung der Mundverdauung und des Mundspeichels für die Thätigkeit des gesunden und kranken Magens, Ztschr. f. klin. Med. **21:** 97-117, 1892.
17. Best, F., and Cohnheim, Otto: Ueber Bewegungsreflexe des Magendarmkanals, Ztschr. f. physiol. Chem. **69:** 113-116, 1910.
18. Bickel, Adolf: Die Pathologie der Sekretion und Motilität im Verdauungskanal, Internat. Beitr. z. path. u. Therap. d. Ernährungsstör **1:**116-127, 1910.
19. Ivy, A. C.: Contributions to the Physiology of the Pancreas: V. The Causes of External Pancreatic Secretion and the Mechanisms Concerned, Ann. Clin. Med. **4:** 798-805 (April) 1926.
20. Cohnheim, Otto; and Dreyfus, G. L.: Zur Physiologie und Pathologie der Magenverdauung, Ztschr. f. physiol. Chem. **58:** 50-83, 1908.
21. Carlson, A. J., and Luckhardt, A. B.: Contributions to the Physiology of the Stomach: X. The Condition of the Oesophagus During the Periods of Gastric Hunger Contractions, Am. J. Physiol. **33:** 126-142, 1914.
22. Von Benczur, G.: Beiträge zur Kenntnis der Peristaltik des Dünndarms, Internat. Beitr. z. Path. u. Therap. d. Ernährungsstör. **1:** 5-28, 1909.
23. Borchardt, W.: Gibt es nervöse Chemorezeptoren in der Dünndarmschleimhaut? Zugleich ein Beitrag über die Einwirkung der Psyche auf Tonus und Bewegung des Dünndarms (Nach Versuchen an Hunden mit Vella-Fisteln), Arch. f. d. ges. Physiol. **225:** 402-426, 1927.
24. Katsch, Gerhardt: Beiträge zum Studium der Darmbewegungen: IV. Psychische Beeinflussung der Darmmotilität, Ztschr. f. exper. Path. u. Therap. **12:** 290-294, 1913.
25. Cash, J. T.: Contribution to the Study of Intestinal Rest and Movement, Proc. Roy. Soc. London **41:** 212-231, 1886.
26. Hannes, B.: Ueber die Insuffizienz der Valvula ileocoecalis, München. med. Wchnschr. **67:** 745-746 (June 25) 1920.
27. Hurst, A. F., and Newton, Alan: The Normal Movements of the Colon in Man, J. Physiol. **47:** 57-65, 1913.
28. Brunswick, D.: The Effect of Emotional Stimuli on the Gastro-Intestinal Tone: I. Methods and Technique, J. Comp. Psychol. **4:** 19-79 (Feb.) 1924; II. Results and Conclusions, ibid. **4:** 225-287 (June) 1924.
29. Danielopolu, D., and Carniol, A.: Sur le rôle de l'élément psychique dans la motilité de l'estomac chez l'homme, Ann. de med. **13:** 63-70 (Jan.) 1923.
30. Sinelnikoff, E. J.: Über Hungerbewegungen eines Dünndarmabschnitts beim Menschen, Arch. f. d. ges. Physiol. **215:** 427-430, 1926.
31. Miller, R. J.; Bergeim, Olaf; and Hawk, P. B.: The Influence of Anxiety on Gastric Digestion, Proc. Soc. Exper. Biol. & Med. **17:** 97-98, 1920. Miller, R. J.; Bergeim, Olaf; Rehfuss, M. E., and Hawk, P. B.: Gastric Response to Foods: X. The Psychic Secretion of Gastric Juice in Normal Men, Am. J. Physiol. **52:** 1-11 (May) 1920.
32. Cohnheim, Otto: Beobachtungen über Magenverdauung, München. med. Wchnschr. **54:** 2581-2583, 1907.
33. Carnot, P.: Le jeu du sphincter pylorique, Arch. d. mal. de l'app. digestif **1:** 651-666, 1907.
34. Cannon (footnote 9, second reference).

Sinelnikoff[35] described how one day as he was recording the contractions of a Vella loop of bowel the crash of a falling window frightened the dog and immediately caused a lessening of the tone and activity of the intestine. In sensitive animals the mere presence of a stranger in the laboratory was enough to inhibit the movements of the bowel. Some animals, however, were so unemotional or insensitive that nothing influenced them. Using abdominal windows in rabbits, Sinelnikoff[35] confirmed Auer's[36] observation that the slightest pain will stop peristalsis. It is a curious fact that when a sleeping dog appeared to be dreaming the bowel became quiet. Borchardt,[23] who worked with dogs with a loop of intestine under the skin, found it hard to interpret the results of experiments because the tone and activity of the intestine were constantly responding to slight stimuli such as the footsteps of some one, a pat on the head, a scolding word, or the crying of a cat in an adjacent room. All these reactions came to an end when the nerves to the loop were cut.

Rossbach,[37] who watched coils of bowel contracting under the thin abdominal wall of a woman, noticed that fright or anger would stop all activity for about ten minutes.

That the currents in the digestive tract can be reversed by worry was well shown by a neurotic young woman who one day received a menacing letter from the income tax collector. This so frightened her that, instead of going to see what the trouble was, she took to her bed and vomited day and night for a week. She stopped only when, after learning what had happened to upset her, I went to the custom house and appeased Uncle Samuel with $3.85; which shows incidentally that not all medicine comes out of bottles. Lehman and Gibson,[38] who studied a man with a jejunal fistula, actually saw reverse peristalsis in the bowel associated with periods of mental depression.

THE PSYCHIC SECRETION OF SALIVARY, GASTRIC AND PANCREATIC JUICE

From time immemorial it has been known that the thought or sight or smell of a luscious morsel will make the mouth water, or, as Brillat-Savarin would say, "inundate with pleasure." Brer Rabbit "dribbled at de mouf" when he saw something that he wanted badly, and any one who has owned dogs knows how some will drool in anticipation of a titbit. Primitive man could see for himself that under the influence of psychic stimuli the salivary glands prepare for the approaching feast, but only with the coming of the present era of experimental science could it be learned that the gastric glands can similarly be stirred into action.

It was in 1843 that Blondlot[39] first noticed, while working with dogs with a gastric fistula, that the simple tasting of food would cause secretion to appear in the opening, and nine years later, Bidder and Schmidt,[40] again with dogs, found that even the sight of food would cause the gastric juice to flow. Later, in 1878, Richet[41] observed in man the secretion of gastric juice following the chewing of tasty food. The subject of his experiments, like so many of those since studied, had some time before inadvertently swallowed lye, and the resulting complete closure of the esophagus had compelled him for the rest of his life to take nourishment through a hole made into the stomach. Beaumont[42] appears never to have observed the psychic secretion of gastric juice because he says repeatedly that St. Martin's stomach usually remained dry until some excitant like food was applied to the mucous membrane.

Since 1878 the existence of a psychic or appetite juice has been many times confirmed, generally with the help of animals with a gastric fistula and with the esophagus brought out into the neck. As food is eaten it drops to the floor, and the animal has the pleasure of gulping it over and over again until such time as he tires of the game. Dogs with different temperaments naturally differ in their reactions to such "sham feeding," but in most of them it produces a definite flow of gastric juice. The better a dog likes a particular food, such as meat or biscuit, the greater will be the amount of secretion.[43] As one would expect, in man, with his greater sensitiveness to associated impressions, the amount of psychic secretion depends even more on temperament, on the amount of real interest and desire aroused by the presentation of food, and on the care with which unpleasant features are excluded.

Some experimenters like Umber,[44] Hertz and Sterling,[45] Schrottenbach,[46] Mantelli,[47] Bogen,[48] Sommerfeld,[49] and Cade and Latarjet,[50] working with men, women and children with good appetites, found little difficulty in securing gastric secretion when they allowed the subject to see, smell, or taste food, or sometimes simply when they brought up before him mental pictures of it, while Carlson,[51] with his more phlegmatic Mr. V., found that food had to be tasted or chewed before a reflex secretion could be obtained.

The girl studied by Bickel[52] and Kaznelson[53] appeared to react better to the smell and taste of food than to chewing, while von Friedrich,[54] Schüle,[55]

35. Sinelnikoff, E. J.: Über den Einfluss des Grosshirns auf die motorische Funktion des Dünndarms, Arch. f. d. ges. Physiol. **213:** 239-244, 1926.

36. Auer, John: Gastric Peristalsis in Rabbits Under Normal and Some Experimental Conditions, Am. J. Physiol. **18:** 347-361, 1907.

37. Rossbach, M. J.: Beiträge zur Lehre von den Bewegungen des Magens, Pylorus und Duodenums, Deutsches Arch. f. klin. Med. **46:** 296-322, 1890.

38. Lehman, E. P., and Gibson, H. V.: Observations in a Case of Jejunal Fistula, J. A. M. A. **82:** 1918-1920 (June 14) 1924.

39. Blondlot, quoted by Pavlov (footnote 43).

40. Bidder, F., and Schmidt, C.: Die Verdauungssäfte und der Stoffwechsel: Eine physiologisch-chemische Untersuchung, Leipzig, G. A. Reyher, 1852, p. 35.

41. Richet, C.: Des propriétés chimiques et physiologiques du suc gastrique chez l'homme et les animaux, J. de l'anat. et de la physiol. **14:** 170-333, 1878.

42. Beaumont, William: Experiments and Observations on the Gastric Juice and the Physiology of Digestion, Plattsburgh, F. P. Allen, 1833.

43. Pavlov, I. P.: The Work of the Digestive Glands, ed. 2, translated by W. H. Thompson, London, C. Griffin & Co., 1910.

44. Umber: Die Magensaftsekretion des (gastrostomierten) Menschen bei "Scheinfütterung" und Rectalernährung, Berl. klin. Wchnschr. **42:** 56-60, 1905.

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48. Bogen, H.: Experimentelle Untersuchungen über psychische und associative Magensaftsekretion beim Menschen, Arch. f. d. ges. Physiol. **117:** 159-160, 1907.

49. Sommerfeld, P.: Zur Kenntnis der Sekretion des Magens beim Menschen, Arch. f. Anat. u. Physiol., physiologische Abt., suppl., 1905, pp. 455-456.

50. Cade, A., and Latarjet, A.: Réalisation pathologique du petit estomac de Pavlov: Étude physiologique et histologique, J. d. physiol. et de path. gén. **7:** 221-233, 1905.

51. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press **7,** 1916.

52. Bickel, Adolf: Experimentelle Untersuchungen über die Magensaftsekretion beim Menschen, Deutsch. med. Wchnschr. **32:** 1323-1327, 1906.

53. Kaznelson, Helene: Scheinfütterungsversuche am erwachsenen Menschen, Arch. f. d. ges. Physiol. **118:** 327-352, 1907.

54. Von Friedrich, Ladislaus: Ueber den Einfluss des Kauaktes auf die Sekretion des Magens bei Gesunden und Kranken, Arch. f. Verdauungskr. **28:** 153-207 (Sept.) 1921.

55. Schüle: In wie weit stimmen die Experimente von Pawlow am Hunde mit den Befunden am normalen menschlichen Magen überein? Deutsches Arch. f. klin. Med. **71:** 111-132, 1901.

Skray,[56] Troller,[57] and Schreuer and Riegel,[58] were led by their experience to emphasize the importance of chewing. Kast,[59] who pumped his own stomach, found that the sight and smell of good food would cause a slight flow of juice, and Miller, Bergeim, Rehfuss and Hawk,[31] also using the tube, came to the conclusion that in their subjects the sight of food was more effective than the smell. In the absence of these stimuli, tasting and chewing had little effect.

Schreuer and Riegel[58] emphasized what may be an important point and that is that persons with normal stomachs and with diets containing much meat may get along well without appetite juice while persons with a tendency to subacidity or persons living largely on carbohydrates may get into serious trouble if they do not chew or if they eat under unpleasant and unfavorable conditions.

According to Pavlov,[43] London and Pewsner,[60] Oechsler,[61] Babkin,[62] Holsti[63] and Ivy,[19] there is a slight psychic secretion of pancreatic juice, a secretion which can no longer be aroused after vagotomy. Villaret and Justin-Besançon[64] looked carefully for it in a man with a pancreatic fistula but could not demonstrate it. Sinelnikoff[35] observed a psychic secretion of intestinal juice, but the failure of Glinski[65] with similar experiments leaves the subject in doubt. Bruno,[66] who worked with dogs with the papilla of Vater transplanted into the skin of the abdomen, saw no increase in the flow of bile after sham feeding. Mann tells me that in some of his dogs with biliary fistulas he has noticed increases in flow that might well have been of psychic origin, but Whipple writes that he has never noticed anything that suggested to him the existence of such a phenomenon. According to Sosman, Whitaker and Edson,[67] psychic stimuli such as the sight, taste or smell of food have no effect on the emptying of the gallbladder, but Boyden[68] has seen a sudden momentary discharge of bile when patients were subjected to the odor of fried bacon.

THE STOPPAGE OF SECRETION BY EMOTION OR FATIGUE

Just as secretion can be induced by pleasurable emotions, so also it can be stopped by unpleasant or painful ones. Cannon[69] speaks of the ancient ordeal used in India to pick a thief out of a group of suspected persons. Each is given a bowl of rice and the criminal is detected by his dry mouth and his inability to insalivate the food. Bickel and Sasaki[70] found that dogs that became much excited over barking at a cat, or that were worried over the presence of a stranger in the room, did not secrete gastric juice. Similarly with men and women it has been shown repeatedly that unpleasant emotions such as fear, anger, annoyance, anxiety or disgust will put a stop to secretion.

The studies of Hornborg[71] and Bogen[48] are of interest because they were carried out on two children, 3 and 4 years of age, who cried angrily when they were not immediately given the food that was shown them. Under those circumstances it was not surprising that the stomach remained dry. Similarly, when Schrottenbach[46] spoke sharply to his boy with a gastric fistula no psychic juice appeared. As one might expect, when a test meal is given by tube there is less secretion of gastric juice than when the patient is allowed to eat normally.[19]

Cannon[72] described a woman who appeared at the first examination to have no gastric juice but who on subsequent tests was found to have plenty. It was then learned that on the night preceding the making of the first analysis she had been kept awake and badly upset by the conduct of a husband who had chosen the occasion to get uproariously drunk.

That the flow of intestinal juice may likewise be stopped by distressing emotions is indicated by the experience of Macewen[1] with a young man who had a large fistula into the cecum. One day when the patient received bad news it was noticed that the mucous membrane had lost its luster and its usual coating of moisture. It was noticed also that the material coming down from the ileum became acid, and the man complained of feeling "bilious."

In dogs a stoppage of pancreatic secretion under excitement has been demonstrated by Oechsler.[61] When the flow was well under way it could easily be stopped by the bringing into the room of a cat or of a bitch in heat. Freudians will be pleased to learn that so long as libido was suppressed there was no flow but when it was satisfied the pancreas became active again. Ivy[19] tells me that in dogs distress will decrease secretion even in the transplanted pancreas. In this case, with all nerves to the gland destroyed, the stoppage might be due to closure of the pylorus, to vasoconstriction in the mammary gland, which nourishes the transplant, or to the production of some inhibitory substance in the blood.

As the flow of pancreatic juice is somewhat dependent on the entrance of an acid chyme into the duodenum, any lowering of gastric acidity of psychic or other origin might be expected to interfere with pancreatic function. Actually, as so often happens in the body, nature in some way gets around the difficulty, and those who have sought for evidence of pancreatic insufficiency in persons without gastric juice have failed to find it.[73]

56. Skray, Gisela: Über den Einfluss des Kauaktes und über die Wirkung psychischer Faktoren auf die Beschaffenheit des Mageninhalts nach Probefrühstück, Arch. f. Verdauungskr. **18:** 495-507, 1912.

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62. Babkin, B. P.: Die äussere Sekretion der Verdauungsdrüsen, ed. 2, Berlin, J. Springer, 1928.

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65. Glinski, quoted by Babkin (footnote 62), p. 778.

66. Bruno, quoted by Luciani, Luigi: Human Physiology, translated by F. A. Welby, London, Macmillan Company **2:** 217, 1913.

67. Sosman, M. C.; Whitaker, L. R., and Edson, P. J.: Clinical and Experimental Cholecystography, Am. J. Roentgenol. **14:** 495-503 (Dec.) 1925.

68. Boyden, E. A.: Gallbladder Versus Sphincter Papillae, Proc. Soc. Exper. Biol. & Med. **25:** 99-100, 1927.

69. Cannon, W. B.: The Influence of Emotional States on the Functions of the Alimentary Canal, Am. J. M. Sc. **137:** 480-487, 1909.

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71. Hornborg, A. F.: Beiträge zur Kenntniss der Absonderungsbedingungen des Magensaftes beim Menschen, Skand. Arch. f. Phys. **15:** 209-258, 1904.

72. Cannon, W. B. (footnote 69); Bodily Changes in Pain, Hunger, Fear and Rage, New York, D. Appleton & Co., 1915.

73. McClure, C. W., and Jones, C. M.: Studies in Pancreatic Function: The Enzyme Concentration of Duodenal Contents in Pathological Conditions Involving the Pancreas, Liver and Stomach, Boston M. & S. J. **187:** 909-923 (Dec. 21) 1922. McClure, C. W.; Montague, O. C., and Mortimer, E.: Pancreatic Function in the Absence of Free Hydrochloric Acid from the Stomach, ibid. **190:** 357-359 (Feb. 28) 1924.

Many years ago, as a boy helping my father in his practice, I was struck with the way in which fright and pain can stop both the secretory and the motor functions of the digestive tract. Early one morning a girl fell out of a mango tree and broke her arm. It was a long drive in a buggy to the city, so it was near noon before the parents could bring the child to the office. With the first few whiffs of anesthetic she vomited, and I have never forgotten my surprise at seeing the fruit, eaten hours before in the tree, still untouched by digestion, and with the marks of her teeth clearly chiseled on the surfaces.

In a man (with a fistula) studied by Mantelli,[47] gastric secretion was inhibited not only by psychic strain but also by physical fatigue. For an hour or two after strenuous muscular exertion, little or no psychic juice could be obtained; and only after two hours did the stomach respond normally to the actual presence of food. Similar observations were made by Cohnheim and his associates [74] who studied their own gastric secretion the morning after a severe climb in the Alps; one had normal acids, two were subacid, and one was almost anacid. The failure to secrete may have been due partly to fatigue and partly to sweating, with the resultant dehydration and loss of chlorides.

These observations interest me because on trips into the mountains I have noticed that the man who comes into camp hungry from an exhausting climb and immediately sits down to a hearty meal will occasionally suffer afterward for several days with abdominal pain, flatulence or diarrhea. Sometimes the food will appear in the stools, decomposed, foul smelling and undigested, and the most obvious explanation is that fatigue dried up the all-important ferments. I have seen similar failures of digestion with resultant diarrhea when food was eaten under psychic strain as at banquets, at political meetings, or in homes overshadowed by illness and death, and I suspect that many upsets now ascribed to the eating of some unknown spoiled food are really due to this drying up of secretions which accompanies excitement and fatigue.

Beaumont [42] observed that in a number of conditions, among which he mentioned "fear, anger, or whatever depresses or disturbs the nervous system, the villous coat on the stomach becomes sometimes red and dry, at other times pale and moist, and loses its smooth and healthy appearance; the secretions become vitiated, greatly diminished, or entirely suppressed; the mucous coat scarcely perceptible; the follicles flat and flaccid, with secretions insufficient to protect the vascular and nervous papillae from irritation."

On one occasion when Alexis St. Martin became very angry, much bile regurgitated into the stomach, which makes one wonder if there is not something after all in the ancient association between the ideas of bile (chole) and anger (choler). He who remembers his Homer knows how poorly restrained were the emotions of our early ancestors, and any one who has seen a Mexican woman vomiting bile after a "corage" or wild debauch of temper can imagine how some such physiologic observations may have influenced the growth of human speech.

One of the necessary accompaniments or precursors of secretion in the digestive tract appears to be a flow of blood to the part. Many have observed that, when digestion commences, the pale pink mucous membrane becomes engorged and reddened,[75] and Schrottenbach [46] found that coincident with the psychic secretion of gastric juice there was a diminution in the flow of blood to the arm and presumably an increase in that to the digestive tract. The close relation between this flow of blood to the stomach and the amount of juice secreted has been shown by Ivy and Farrell.[76]

According to Bennett and Venables,[77] a secretion of psychic juice can be excited in a hypnotized person by telling him that he is eating, and it can be stopped again by telling him that a disaster is impending.

Studies by Lueders and others [78] on the insane indicate that gastric secretion and motility are depressed during periods of depression and normal or better than normal during periods of exaltation.

That the vagi have much to do with the flow of psychic juice is indicated by the fact that the phenomenon disappears after section of these nerves. Both the vagi and the splanchnics appear to carry secretory and inhibitory fibers to the pancreas; but, as can be seen from Babkin's [62] excellent review, the problem is complicated and some features remain obscure.

COMMENT

It would seem from all this that physicians ought more often to warn their patients against eating at those times when the mind is so distracted that there is no chance for the development of psychic juice or psychic tone. Under the conditions of modern life, probably most of the meals eaten by persons who have little appetite have to be digested without any help from the cerebrum. Fortunately, the necessary centers lie farther back in the more autonomic parts of the brain,[79] so that even the absent-minded professor and the tired business man, eating with thoughts miles away, can perhaps secrete "appetite juice" unconsciously much as a puppy does on its first day of life.[80]

As Pavlov [43] has shown so clearly, the "appetite juice" serves to start digestion on its way; it acts somewhat like kerosene on wood in a cold stove. Without it the fire would eventually get started, but with it a half hour of blowing and waiting can be saved. According to Pavlov, it may be that the soup at the beginning of the meal, with its strong tendency to excite secretion in the stomach, saves many an inattentive and uninterested diner from indigestion.

Smith, Holder and Hawk [81] caused a number of volunteers to eat food that was prepared and served so as to be repulsive, and found that in most cases it was broken up by the digestive juices and properly absorbed. This agrees with the fact well known to clinicians that a woman put to bed and stuffed against her inclinations will generally gain in weight.

The observations of Mantelli [47] on the weakness of gastric digestion during the period of an hour or two

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81. Smith, C. A.; Holder, R. C., and Hawk, P. B.: Is Unpalatable Food Properly Digested? Proc. Soc. Exper. Biol. & Med. **17:** 98-99, 1920.

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after strenuous physical exertion suggest that perhaps one ought to be at least as careful of oneself as an experienced horseman is of his steed when it brings him home from a long journey. He would never think of watering or feeding it immediately but always ties it up for an hour or two so that when it feeds it will not be seized by an attack of colic. I strongly suspect that a number of the intestinal upsets and diarrheas commonly experienced by persons who are traveling, and usually ascribed by them to the eating of some spoiled food, are due purely to the fact that a large meal was taken into a digestive tract that was too tired to deal with it.

Reasoning teleologically, I have never been able to see why the digestive tract should be so subject to nervous inhibition. Surely when a man is face to face with some difficult or dangerous situation he has every need for a good digestion not only to conserve his strength but also to keep up his courage. Perhaps, as Cannon [71] once suggested, these nervous inhibitions of little use to us today are survivals from our cave-dwelling forebears whose lives at any moment might depend on the strength that could be withdrawn from the inner organs and concentrated in muscles needed for fighting or for running away.

I look for a time to come when some of those who now contend daily with a hypersensitive, spastic colon will be relieved by the cutting of a few rami of the sympathetic nerves. Important steps along this line have already been taken,[82] but knowledge in regard to the distribution and function of these nerves is still insufficient and it is best to proceed cautiously.

It has been shown that emotions can influence the functions of the glandular tissue about the mouth and in the stomach, pancreas and intestine; but how about the largest gland of all, the liver? Might not its functions also be affected favorably or unfavorably by emotion? It is obvious that a large branch of one vagus runs to the hilum, but so far as I know no one knows exactly why it is there. The liver has so many duties to perform, the factors of safety are so large, and the methods of measurement of function so insufficient that it is as yet impossible to study its responses to emotion. Wilder tells me, however, that the sudden exacerbations of diabetes often seen in patients undergoing psychic strain are probably due to changes, emotionally produced, in hepatic function.

Just as sensitive persons blanch and blush externally, so they may perhaps blanch and blush internally. It is known that marked changes in the blood supply of the mucosa do take place [75] and they might well help or hinder the mechanism which normally removes gas from the digestive tract.[8] Such a mechanism, together with air swallowing, might explain the sudden attacks of flatulence seen in nervous persons. Such changes in circulation might well affect also absorption in general, but so far very little is known about the subject.

Some of the effects of emotion on the digestive tract may come indirectly also through those nervous stimuli which cause an outpouring of secretion from the thyroid and suprarenal glands. As is well known, hyperthyroidism often produces diarrhea.

Practically, what can be done to improve matters? How can a patient get back a psychic juice and a psychic tone that he or she has lost? Obviously, of course, by resting, by getting sleep, by avoiding worry and annoyance, and by cultivating a better technic at mealtimes. As Brillat-Savarin has said, "Animals feed, man eats, the man of intellect alone knows how to eat." Perhaps it would do this generation good to read Savarin's book because I fear that too many today are simply "feeding." According to him, no dinner guest should ever be invited again unless with the coming of each dish to the table his face was seen to light up, and his eyes to shine with anticipation.

It is easy enough to remind patients that "Better is a dry morsel and quietness therewith than a house full of feasting with strife"; [83] the problem for them is how to avoid the strife and worry and care. For many it is impossible. Doubtless all that can be done at times is to postpone the meal until strong emotion has passed, calm has been restored, fatigue has lessened, and hunger has returned. In other words, we should accept Macbeth's advice and let "good digestion wait on appetite and health on both."

A practical application of these studies might perhaps be made by the surgeon when after an operation he is worried over a bowel that fails to pass onward fecal material and gas. Without the usual stimulus of food why should it not fail? From what has been presented here, it would seem obvious that when peristalsis is desired an attempt should be made to interest the patient in food; some savory morsel should be brought to him and he should be allowed to smell it and taste it and chew it. Even if he were to swallow some of it I doubt that it would do any harm because, if the tract were not ready to accept it, it would only be vomited. Actually in the laboratory the best way in which to excite a peristaltic rush is to make the animal swallow. The resulting wave in the duodenum will often appear so promptly that it is probably an extension of the ripple that ran down the esophagus and over the stomach. Similarly, when reverse waves are rippling backward over the stomach and producing heartburn, belching, hiccup and other forms of distress in the region of the cardia, the patient can sometimes stop them and drive them down again by swallowing repeatedly, by sipping water, or by chewing gum.

SUMMARY

Some cases are reported in which there were signs of a psychic increase in intestinal tone and activity. Much experimental evidence has been gathered to show that emotions can stimulate or inhibit not only peristalsis but also the flow of the salivary, pancreatic and gastric juices. Normally, the sight, smell and thought of food prepare the digestive tract for the work it has to do. Not only mental but also physical fatigue can interfere with this process.

A syndrome is described in which most of the sphincters of the body are hypersensitive and hypertonic.

It is suggested that more effort be made to warn patients against eating when absent-minded, mentally upset, or greatly fatigued. Not infrequently some article of food gets the blame for an attack of indigestion when the trouble was really due to the fact that a large meal was put into a stomach that was not ready to receive it.

It is suggested that after operations, when a return of peristalsis and intestinal tone is desired, it would be logical to give the patient some tasty morsel of food, preferably meat.

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83. Proverbs, 17: 1.

SYPHILIS AMONG STATE PRISONERS

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Every prisoner who enters the California State Prison at San Quentin is given a thorough physical examination. This includes the Wassermann test for syphilis.

Ten thousand men have undergone this examination from Jan. 1, 1918, to Jan. 1, 1926.

Of this number, 8,004, or 80 per cent, were white; 530, or 5.3 per cent, were negroes; 1,265, or 12.65 per cent, were Mexicans, and 201, or 2 per cent, were yellow.

The Wassermann reactions were as follows:

Of 8,004 white persons, 578, or 7.2 per cent, reacted positively.

Of 530 negroes, ninety-six, or 18.1 per cent, reacted positively.

Of 1,265 Mexicans, 198, or 15.6 per cent, reacted positively.

Of 201 of the yellow race, forty-nine, or 24.3 per cent, reacted positively.

Of the total number of 10,000, 921, or 9.21 per cent, reacted positively.

Of the 10,000 prisoners, 1,507, or 15 per cent, gave a history of venereal sore which may have been chancre, chancroid, herpes or venereal wart.

Of the 10,000 prisoners, 4,820, or 48.2 per cent, gave a history of gonorrhea which cannot well be mistaken.

Of this number of prisoners, 36.58 per cent were married and 63.42 per cent were single.

EXCRETION OF NEUTRAL RED IN THE STOMACH IN ACHYLIA GASTRICA*

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In 1908, Fuld [1] discovered that neutral red would appear in a Pavlov pouch after it was placed in the large stomach. Many years later, Finkelstein [2] found that it was practically the only dyestuff eliminated in appreciable quantities in the Pavlov pouches of dogs. In 1923, one year later, Glaessner and Wittgenstein [3] applied this fact clinically. Finding that this dyestuff was nontoxic and not irritating locally, they injected 4 cc. of a 1 per cent watery solution intramuscularly in forty patients. They found that the appearance time of the neutral red in the stomach paralleled the acidity; i. e., in normal persons it was fifteen minutes; in hyperacidity, from five to eight minutes; in subacidity, from twenty to sixty minutes; and in achylia gastrica, it did not appear. In 1925, being interested in the possibility of improving our studies of gastric function, we [4] repeated this work in a series of forty-six cases. The essential points brought out were that (1) the excretion time of the dye tends to parallel the acidity; (2) the excretion time does not have any definite relation to any local disease; (3) in achlorhydria, the dye does not appear for two hours, and (4) the excretion of the dye is not concerned with the absence or presence of the gastric ferments. In the main, the results apparently corresponded with those of Glaessner and Wittgenstein.

About that time, a few other publications appeared with reports of investigations on the excretion of neutral red in the human stomach. Piersol, Bockus and Bank [5] made similar observations but concluded that the Rehfuss fractional test meal gave more information as a test of gastric function since it also followed the motor activities. They considered it of value, however, in the study of achylia gastrica. Carnot and Gaehlinger's [6] conclusions coincided with those of Glaessner and Wittgenstein and with our own. A dissenting voice was raised by Davidson, Willocx and Haagensen,[7] who stated that neutral red was excreted in every achylia except the achylia of pernicious anemia. They suggested its use, therefore, in the differential diagnosis of the achylias. Later, Davidson [8] in a communication to THE JOURNAL criticized our conclusion that the absence of the dye merely signified achlorhydria and not a disease. He stated that if we had administered larger doses of the dyestuff, given the patients water to drink and acidified the gastric contents to bring out the color of the dye, we would have recovered neutral red in every achylia except that of pernicious anemia.

Because of this criticism of our technic and because of the great importance attached at present [9] to the diagnosis of achylia gastrica, it was decided to study the excretion of neutral red in patients with suspected achylia gastrica. The procedure was varied as follows: The patients presented themselves with fasting stomachs, the Rehfuss tube was passed, and 40 mg. of neutral red dissolved in a few cubic centimeters of sterile distilled water was injected intramuscularly (gluteal or deltoid). The patients were then given, at once, 250 cc. of strained oatmeal gruel. A sample was aspirated every fifteen minutes for two hours. This procedure was carried out in sixty cases of achylia gastrica; the results are given in table 1. All of these patients had had an Ewald and at least one fractional test meal and often two or three with bouillon, alcohol or oatmeal gruel. In fifteen cases, histamine (Imido-Roche, 7½ minims, 0.45 cc., subcutaneously), was administered in addition to the neutral red and the test meal. Neither the dye nor free hydrochloric acid appeared in the gastric contents. With reference to certain criticisms, one should state that bile, stained reddish brown by the dye, can readily be excluded by the practiced eye as a source of error. A consideration of the results of this study as presented in table 1 shows that, irrespective of the disease present, the dyestuff is not excreted for two hours when a true achlorhydria is present. In the group are included six cases of pernicious anemia, ten of gastric carcinoma, three of cholelithiasis, seventeen patients with subtotal gastrectomy for ulcer, and two proved cases of gastric syphilis. It is obvious that true achylia gastrica, or, better expressed, true achlorhydria, occurs in a variety of

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1. Fuld, E.: München. med. Wchnschr. **43**: 908, 1908.
2. Finkelstein, R.: Arch. f. Verdauungskr. **30**: 299 (Jan.) 1923.
3. Glaessner, K., and Wittgenstein, H.: Klin. Wchnschr. **2**: 1650 (Aug. 27) 1923.
4. Winkelstein, Asher; and Marcus, J. M.: Excretion of Neutral Red into the Human Stomach, J. A. M. A. **85**: 1397 (Oct. 31) 1925.
5. Piersol, G. M.; Bockus, H. L., and Bank, Joseph: Am. J. M. Sc. **170**: 405 (Sept.) 1925.
6. Carnot, P., and Gaehlinger, H.: Paris. méd. **2**: 37 (Nov. 8) 1920.
7. Davidson, P. B.; Willocx, Edouard; and Haagensen, C. D.: Gastric Excretion of Neutral Red, J. A. M. A. **85**: 794 (Sept. 12) 1925.
8. Davidson, P. B.: The Acidification of Gastric Contents in Determining Neutral Red Excretion, correspondence, J. A. M. A. **85**: 1748 (Nov. 28) 1925.
9. Schneider, J. P., and Carey, J. B.: Achlorhydria, J. A. M. A. **91**: 1763 (Dec. 8) 1928.

conditions and that the failure of the neutral red to appear is linked up with the absence of the acid and is not determined by the disease present.

Certain interesting features of this study deserve emphasis. We have been impressed by the fact, also mentioned by Piersol, Bockus and Bank,[5] that a single, and occasionally a repeated, Rehfuss fractional test meal is not enough to establish the diagnosis of true

TABLE 1.—*Results of Experiments With Neutral Red in Sixty Cases of Gastric Achylia*

Patient	Diagnosis	Free Hydrochloric Acid	Appearance Time of Dye	Ferments
1	Neurosis	0	0	Present
2	Gastric carcinoma	0	0	Present
3	Pernicious anemia; syphilis	0	0	0
4	Diarrhea	0	0	—
5	Constipation	0	0	—
6	Gastric carcinoma	0	0	0
7	Neurosis	0	0	—
8	Syphilis	0	0	0
9	Cholelithiasis	0	0	Present
10	Subtotal gastrectomy for carcinoma	0	0	Present
11	Subtotal gastrectomy for carcinoma	0	0	0
12	Achylia gastrica	0	0	0
13	Gastric carcinoma	0	0	—
14	Mucous colitis	0	0	0
15	Achylia gastrica	0	0	0
16	Achylia gastrica	0	0	Present
17	Constipation	0	0	—
18	Diarrhea	0	0	Present
19	Cholelithiasis	0	0	Present
20	Cholelithiasis	0	0	—
21	Achylia gastrica	0	0	0
22	Neurosis	0	0	Present
23	Subtotal gastrectomy for carcinoma	0	0	Present
24	Subtotal gastrectomy for gastric ulcer	0	0	0
25	Subtotal gastrectomy for duodenal ulcer	0	0	—
26	Subtotal gastrectomy for duodenal ulcer	0	0	—
27	Subtotal gastrectomy for duodenal ulcer	0	0	—
28	Subtotal gastrectomy for duodenal ulcer	0	0	—
29	Subtotal gastrectomy for duodenal ulcer	0	0	—
30	Subtotal gastrectomy for duodenal ulcer	0	0	0
31	Subtotal gastrectomy for duodenal ulcer	0	0	—
32	Subtotal gastrectomy for duodenal ulcer	0	0	—
33	Achylia gastrica	0	0	—
34	Achylia gastrica	0	0	—
35	Achylia gastrica	0	0	—
36	Constipation	0	0	—
37	Pernicious anemia	0	0	—
38	Subtotal gastrectomy for carcinoma	0	0	—
39	Subtotal gastrectomy for carcinoma	0	0	—
40	Gastric carcinoma	0	0	—
41	Pernicious anemia	0	0	—
42	Pernicious anemia	0	0	0
43	Cholelithiasis	0	0	Present
44	Pernicious anemia	0	0	Present
45	Achylia gastrica	0	0	Present
46	Malnutrition	0	0	—
47	Mucous colitis	0	0	—
48	Secondary anemia	0	0	0
49	Subtotal gastrectomy for duodenal ulcer	0	0	—
50	Subtotal gastrectomy for duodenal ulcer	0	0	—
51	Subtotal gastrectomy for duodenal ulcer	0	0	—
52	Subtotal gastrectomy for duodenal ulcer	0	0	—
53	Subtotal gastrectomy for duodenal ulcer	0	0	—
54	Subtotal gastrectomy for duodenal ulcer	0	0	—
55	Subtotal gastrectomy for duodenal ulcer	0	0	—
56	Subtotal gastrectomy for duodenal ulcer	0	0	0
57	Pernicious anemia	0	0	Present
58	Subtotal gastrectomy for carcinoma	0	0	—
59	Gastric syphilis	0	0	—
60	Gastric syphilis	0	0	0

achlorhydria or achylia gastrica. In table 2 are presented sixteen cases in which the Rehfuss test meal did not reveal free hydrochloric acid; yet neutral red appeared within two hours. In these cases, by increasing the intensity of the stimulus (alcohol and bouillon test meals, sight and odor of appetizing food, chewing of an orange, aspiration of a usual home meal), free hydrochloric acid was later provoked. We are convinced by these experiences that in every instance in which neutral red appears, and free hydrochloric acid does not, repeated test meals of various sorts will eventually demonstrate free acid.

This group of false achylias includes the instances in which a small amount of acid is produced and is then neutralized by duodenal regurgitation, as in some of the achylias after partial gastrectomy for ulcer. The problem of the achylias after subtotal gastrectomy for ulcer is being intensively studied by one of us (W.) and will be published elsewhere. In that study, also, neutral red was used to distinguish the true from the apparent achlorhydrias. Again, the acid may be neutralized by the protein from a gastric carcinoma or other neoplasm that is breaking down. In fact, the finding of the combination of an achlorhydria, a high total acidity, and the presence of neutral red has helped in establishing the diagnosis of a gastric carcinoma and in the exclusion of pernicious anemia. We have never encountered a case of pernicious anemia in which neutral red was excreted. Some neurotic patients have the heterochylia described by Hemmeter. That is, they secrete acid at one time and not at another. Neutral red is always excreted in these cases.

Neutral red, then, it may be concluded, is a dyestuff which is excreted in any stomach that is capable of secreting free hydrochloric acid, whether the acid itself is excreted at that particular time or not.

TABLE 2.—*Sixteen Experiments in Which Neutral Red Appeared Within Two Hours*

Patient	Diagnosis	Free Hydrochloric Acid	Total Acidity	Appearance Time of the Dyestuff, Minutes
1	Duodenal ulcer	1st test meal 0	15	30
		2d test meal 42	60	30
2	Gastric carcinoma	1st test meal 0	48	52
		2d test meal 12	42	52
3	Cholelithiasis	1st test meal 0	7	60
		2d test meal 10	28	30
4	Diabetes	1st test meal 0	15	60
		2d test meal 7	15	60
5	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	20	30
		2d test meal 10	20	30
6	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	7	14
		2d test meal 39	58	10
7	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	34	20
		2d test meal 15	22	20
8	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	15	30
		2d test meal 12	18	22
9	Neurosis	1st test meal 0	14	12
		2d test meal 23	40	12
10	Diarrhea	1st test meal 0	12	12
		2d test meal 28	42	12
		3d test meal 40	60	14
11	Neurosis	1st test meal 0	10	30
		2d test meal 0	15	30
		3d test meal 0	15	25
		4th test meal 8	20	
		Breakfast 8	12	
12	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	9	30
		2d test meal 12	20	45
13	Subtotal gastrectomy for duodenal ulcer	1st test meal 0	12	65
		2d test meal 12	20	60
14	Portal cirrhosis	1st test meal 0	15	15
		2d test meal 8	15	15
15	Cholelithiasis	1st test meal 0	20	16
		2d test meal 5	19	16
16	Cholelithiasis	1st test meal 0	12	60
		2d test meal 0	14	50
		3d test meal 10	21	50

The comparative value of histamine and neutral red as tests for achylia gastrica is a matter for discussion. Our own experience convinces us that neutral red is superior for routine use for the following reasons: (*a*) Histamine is a powerful and toxic drug which often produces severe and unpleasant reactions. (*b*) If, as is often the case, neutralization is the cause of the apparent achlorhydria, histamine may not help whereas neutral red does. (*c*) While histamine merely causes a maximum secretion by the cells, neutral red

demonstrates whether the cells can secrete free hydrochloric acid at all. (*d*) Neutral red is nontoxic and not irritating and since each test checks the other,[10] it seems preferable to use the neutral red.

CONCLUSIONS

1. Neutral red is excreted into the stomach whenever free hydrochloric acid is secreted.
2. Neutral red is invariably excreted in the false achlorhydrias.
3. It is not excreted in true achylia gastrica, whatever the cause of the achylia may be.
4. Neutral red gives as much information as histamine and is preferable to the latter for routine use.
5. Neutral red is helpful in the study of the normal and pathologic physiology of gastric secretion and in the differential diagnosis of the diseases producing false and true achylia gastrica.
6. The use of neutral red in every case in which achylia gastrica is suspected is advocated.

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THE ACTION OF HISTAMINE ON THE ALKALI RESERVE *

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In the last few years histamine has been the subject of numerous studies. These studies, by Bockus and Bank,[1] Carnot, Libert and Koskowski,[2] Dobson,[3] Gutowski,[4] Matheson and Ammon,[5] Popielski[6] and Rothlin and Gundlach,[7] among others, made it evident that histamine, introduced either into the subcutaneous or into the intramuscular tissue, has a very pronounced stimulating action on the gastric secretion and chiefly on the secretion of free hydrochloric acid. I had the opportunity of contributing to the study of this property of histamine when Choisy and I[8] recorded the results of our personal experience.

In view of this well established pharmacologic action of histamine, it seemed to me logical to assume that, because of the increase of acidity in the stomach secretion, a corresponding general decrease of acidity should take place in all other body fluids. With such a possibility in mind I studied first the influence of histamine on the p_H of the blood in two patients with acidosis.[9] I found insignificant modifications of the p_H after the injection of histamine. This apparent ineffectiveness, however, might have been expected, since it is well known that the p_H—in other words, the actual reaction of body fluids—is very stable in physiologic conditions and that it changes but little in pathologic ones. On the contrary, the alkali reserve, on account of its constant function of regulating the reaction of body fluids, is subject to changes, and this yields an indirect but none the less fairly reliable measure of any evident deviation of the normal body alkalinity. Indeed, in our clinical experience, histamine showed itself effective in increasing the alkali reserve in four patients with acidosis.[10] The experimental study with rabbits here presented is thus a continuation of previous clinical work.

I used for my experiments a 1:1,000 histamine solution in doses of from 0.5 to 1 cc. for intramuscular injections. The rabbits used weighed from 2.5 to 3 Kg. Blood was taken from the marginal veins of the ears before the injection of histamine and from twenty to 100 minutes after the injection. Between the two venipunctures the rabbits were not given any food. The alkali reserve was determined by the direct method of Van Slyke and Cullen. Control experiments were carried out on ten rabbits, chosen from among those which were used for the experiments with histamine. From each rabbit blood was taken twice, at intervals of from twenty to 150 minutes. All these control experiments were made under the same conditions as the experiments with histamines.

The results obtained are given in tables 1 and 2. Briefly summarized, the observations may be presented as follows:

1. Histamine was effective in fourteen of the total number of eighteen experiments, or in 77.77 per cent.
2. In one (experiment 6) of the six experiments in which blood was taken from twenty to forty-five minutes after the injection of 0.5 cc. of histamine solution, there was no significant modification; in the remaining five the increase ranged from 12.7 to 74.3 per cent; the average increase is 28 per cent.
3. When blood was taken sixty minutes after the injection of 1 cc. of histamine solution, an increase was noticed in all six experiments of from 22.2 to 105 per cent, with an average of 50.55 per cent.
4. In the last group of six rabbits, blood was drawn at intervals of from eighty to 100 minutes after the injection of 1 cc. of histamine solution. The following alkali reserve values were found:

In one experiment (experiment 18), there was no modification; in two (experiments 16 and 17) there was a decrease of 14 and 20 per cent; finally, in three

TABLE 1.—*Carbon Dioxide Capacity of 100 cc. of Plasma, Before and After the Injection of Histamine Solution, 1: 1,000*

Number of Experiment	Alkali Reserve		Modification After Injection, per Cent	Interval Between Injection of Histamine and Vein Puncture, Minutes
	Before	After		
1	56	68 (histamine, 0.5 cc.)	Increase, 21.5	20
2	55	62 (histamine, 0.5 cc.)	Increase, 12.5	30
3	48	66 (histamine, 0.5 cc.)	Increase, 37.5	30
4	46	56 (histamine, 0.5 cc.)	Increase, 21.8	30
5	35	61 (histamine, 0.5 cc.)	Increase, 74.3	35
6	56	58 (histamine, 0.5 cc.)	None	45
7	23.6	48.4 (histamine, 1 cc.)	Increase, 105	60
8	43.6	62.5 (histamine, 1 cc.)	Increase, 43.3	60
9	33.3	47 (histamine, 1 cc.)	Increase, 41.2	60
10	31.8	62.4 (histamine, 1 cc.)	Increase, 49	60
11	45	58.2 (histamine, 1 cc.)	Increase, 22.2	60
12	35.7	62.2 (histamine, 1 cc.)	Increase, 42.6	60
13	44	61 (histamine, 1 cc.)	Increase, 45.4	80
14	60.7	62.6 (histamine, 1 cc.)	Increase, 3.3	85
15	46	54 (histamine, 1 cc.)	Increase, 17.4	90
16	55	47 (histamine, 1 cc.)	Decrease, 14	90
17	49	39 (histamine, 1 cc.)	Decrease, 20.4	90
18	33	32.8 (histamine, 1 cc.)	None	100

10. Bockus, H. L., and Bank, Joseph: The Value of Histamine as a Test for Gastric Function, Arch. Int. Med. **39:** 508 (April) 1927.

* From the Laboratory of Internal Medicine, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital.

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8. Katzenelbogen, S., and Choisy, R.: Arch. d. mal. de l'app. digestif. **17:** 278 (March) 1927; Schweiz. med. Wchnschr. **57:** 1009 (Oct. 15) 1927.

9. From the University Clinic in Geneva, Switzerland, Dr. M. Roch in charge.

10. Rev. méd. de la Suisse Rom., Nov. 25, 1927.

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experiments (13, 14 and 15), an increase was noticed, within the limits, from 3.3 to 45.4 per cent. The average increase in the whole group was 5.35 per cent.

This short recapitulation of results shows that, even in so short a time as from twenty to forty-five minutes after the injection of histamine, a significant increase in the alkali reserve may take place; the increase is much more pronounced sixty minutes after the injection, whereas after a longer time, from eighty to 100 minutes after the injection, there may be present either no modification (there may be even a decrease) or an increase which may rise to a high level, as experiment 13 demonstrates.

TABLE 2.—*Control Experiments: Carbon Dioxide Capacity of 100 cc. of Plasma* *

Number of Experiment	Alkali Reserve		Time Between Blood Takings, Minutes
	First Blood Taking	Second Blood Taking	
1	55	54	30
2	57	55	30
3	51	52	30
4	48	45	60
5	58	56	60
6	53.2	54.8	60
7	54	55.6	60
8	63	62	95
9	56	57	95
10	51	50	150

* There were no modifications in the specimens of the second blood takings.

Table 2, including the control experiments, does not need much comment. The figures presented corroborate the other results perfectly; as they do not show any significant spontaneous changes of the alkali reserve, they confirm the effectiveness of histamine. In this study on animals an important support is thus found for our few clinical observations, which, unfortunately, could not be extended.

It is obvious that on the basis of results obtained in animals only, however suggestive they may be, one should not anticipate effects in man. But our observations are explicit enough to encourage attempts at using histamine in human acidosis. Of course, in diabetic acidosis accompanied by hyperglycemia, as is usually the case, histamine cannot be substituted for insulin, which presents the advantage of influencing both hyperglycemia and acidosis. It might possibly be used with benefit as an adjuvant in diabetic coma. The fact that histamine, as La Barre [11] and I have shown,[12] provokes hyperglycemia should not interfere with its use in a grave diabetic acidosis with or without coma; its hyperglycemic action will be beneficial in counterbalancing the hypoglycemia, which large doses of insulin, usually required in such conditions, may provoke.

On the contrary, in all types of nondiabetic acidosis (postoperative acidosis, acidosis in pregnancy and acidosis in mental disorders) accompanied by a normal level of blood sugar, histamine alone may render good service.

On account of the assumption that histamine increases the alkali reserve of the blood, through draining acidity into the stomach, I would suggest the combination of histamine treatment with a parallel elimination of the hyperacidity of the gastric contents, either through stomach washing or by neutralization, with alkali given by mouth.

11. La Barre, J.: A propos des variations de la glycémie consécutives à l'injection intraveineuse d'histamine, Compt. rend. Soc. de biol. **94**: 779 (March 26) 1926.

12. Katzenelbogen, S., and Abramson, A.: Les variations du taux de la glycemie consecutives aux injections intraveineuses et intracardiaques d'histamine, Compt. rend. Soc. de biol. **97**: 240 (July 1) 1927.

AMAUROSIS IN EPIDEMIC ENCEPHALITIS *

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During the past twelve years, epidemic encephalitis has received the attention of a host of workers in various fields of medicine. The bacteriologist, the internist, the ophthalmologist, and even the neurosurgeon have been baffled by this disease at some time or other. The general medical practitioner is constantly called on to diagnose and treat this condition. It is the neurologist, however, who has become most engrossed in this disease problem. The usual run of cases has fallen with almost monotonous regularity into some particular group, depending on the chief presenting symptoms or the anatomic localization of the pathologic process. It is therefore the unsual cases that have aroused the greatest interest, as they challenge the diagnostic skill of the physician. For this reason the case reported here is presented.

REPORT OF CASE

M. P., a white woman, aged 37, admitted to the Brownsville Hospital, April 16, 1927, and discharged, June 17, complained chiefly of loss of vision, frontal headache and cough. The family history was negative for chronic or infectious diseases. Her previous history was uneventful. She had had measles and typhoid at 12 years of age. The menses began when she was 12½ and were normal in every respect. The patient married in 1907 and had three children, aged 18 years, 15 years and 1 month, respectively. She had never miscarried. The present illness dated back to about April 2, 1927. She had given birth to her last child two weeks previously, and apparently had an uneventful puerpuerium. April 2, she attended the wedding of a relative. One of the guests had a cold in the head, and was coughing and sneezing throughout the evening. The patient had not seen this guest for several years, and she spent the greater part of the evening in her company. They kissed several times during the evening. On the following day the patient developed a severe occipital headache and a temperature of 102 F. She coughed considerably and expectorated freely. The temperature gradually subsided in three days. About April 7, she complained of dimness of vision, and the eyes felt tired. She then began to experience peculiar visual hallucinations which were present even on closing the eyes. She saw peculiar objects and faces, distorted figures and animals. The hallucinations lasted for about two days. She then had pain in the left side of the head on moving the eyes to the right. April 11, her vision became unusually dim. She could not distinguish objects clearly, but she could differentiate between dark and light. April 13, she complained of "smoke before the eyes" and could not recognize the members of her family.

On admission to the hospital, she appeared well developed and well nourished. The heart was of normal size, and the sounds were of good quality. There were no murmurs. The lungs showed normal resonance and normal expansion, and numerous moist râles were heard all over the chest. The abdomen was soft; there was no tenderness, and no masses were felt. The blood pressure was 125 systolic and 75 diastolic.

Neurologic examination showed the following: Smell was bilaterally impaired but present. The pupils were widely dilated, the right being slightly larger than the left. There was very limited reaction to light but normal reaction in accommodation. There was slight impairment of motion of the left eyeball to the right, and a slight outward deviation of the same eyeball. Both eyeballs were extremely sensitive to the touch. The eyegrounds showed moderate blurring of the margins, and the retinal veins were unduly distended. No hemorrhages were

* Read before the New York Neurological Society, at the New York Academy of Medicine, Jan. 4, 1929.

noted, and no real elevation of the disks was then present. The macular regions were normal. There was no facial asymmetry. The tongue protruded in the midline. Hearing was intact. There was no nystagmus, no dysmetria, no past-pointing and no adiadokokinesia. Finger-to-finger and finger-to-nose tests were normal. All sensibilities were intact, though there was generalized hyperesthesia. No real astereognosis was present. All deep reflexes were accentuated. Pathologic reflexes were not elicited. There was no evidence of any cervical rigidity. The Kernig sign was not obtained. Nose and throat examination did not show any evidence of an infected focus anywhere in the nose or sinuses. The pharynx showed chronic tonsillitis. The action of the vocal chords was normal. The red blood cells numbered 4,400,000, with 84 per cent polymorphonuclears; the white blood cell count was 14,500, with 65 per cent polymorphonuclears. The urine was acid, with a specific gravity of 1.025; albumin and sugar were not present, and the microscopic picture was negative. Spinal fluid came out under three plus pressure; there were 10 cells, and it reduced Fehling's solution. Wassermann and colloidal gold reactions were negative. The temperature was 99 F.; respirations were 22, and the pulse rate was 70. The patient at this time could hardly distinguish objects but could recognize light. A tentative diagnosis of optic neuritis due to either epidemic encephalitis or sinusitis was made.

April 18, the patient complained of excruciating frontal headache. She was totally blind and could not recognize any light. The pupils did not react to light. The disks were decidedly more blurred and were elevated to about 2 diopters above the adjacent fundus. The veins were markedly engorged and tortuous, and the arteries were somewhat contracted. Hemorrhages or exudates were not noted. The maculae did not show any pathologic condition. The eyeballs were very tender, and motion was impeded in all directions because of pain. There was external deviation of the left eyeball. The deep reflexes were still present but somewhat diminished. No pathologic reflexes were elicited, and no real sensory disturbances were noted. Roentgenograms of the sinuses of the skull did not show any pathologic conditions. There was an irregular calcification in the region of the pineal gland. April 20, the patient complained of numbness in the right side of the tongue and in the right angle of the mouth. There was definite hypesthesia and hypalgesia of the right trigeminal area, including the right cornea. There was a mild left supernuclear facial weakness and definite limitation of motion of both eyeballs to the left. The pupils were dilated and regular in outline, and the right one was larger than the left. They did not react to light, but reacted sluggishly in accommodation. Both disks were elevated, and the margins were distinctly obliterated. The disks were edematous, and there were present several recent hemorrhages in both disks. The pathologic condition was greater in the left disk than in the right. The blood Wassermann reaction was recorded as negative. Chemical analysis of the blood showed carbon dioxide, 58 per cent; dextrose, 0.087; urea nitrogen, 17.60; creatinine, 1.57; uric acid, 3; cholesterol, 0.171, and chlorides, 3.75. The icteric index was 5. The van den Bergh test was normal. At 6 o'clock, after having her supper, the patient complained of nausea. A few moments later, without any warning, she suddenly became rigid, the head was retracted, the mouth open, the eyes protruding and the arms outstretched. This lasted for a minute. She then had clonic convulsions of the extremities, which lasted for three minutes. There was foaming at the mouth. The patient was unconscious during the attack. April 23, she complained of a creeping sensation on the right side of the body and face, and of excruciating headache. She was troubled with nausea, especially on turning to the right, and vomited. She was also very dizzy. In the morning she was confused, and was disoriented for person, time and place. At this time she showed loss of conjugate elevation of the eyeballs. There were loss of right corneal sensibility and loss of sensation in the entire right side of the face. On looking either to the right or to the left, there was a definite nystagmus with a rapid component to the right. There was a definite left facial paresis. A left Babinski reflex was elicited. The Bárány test, with 8 cc. of water at 54 C., gave the following result: Right ear: nystagmus to the left occurred in five seconds lasting for two minutes and thirty seconds. Left ear: nystagmus to the right appeared in five seconds lasting for two minutes, accompanied by marked vertigo and nausea. The nystagmus was rather violent. The test pointed to marked hypersensitivity of the vestibular apparatus on both sides. A definite diagnosis of epidemic encephalitis was established on this day, and treatment was instituted accordingly.

April 25, the patient complained of extreme weakness. She showed right sided paresis, including the right side of the face. The right palpebral fissure was wider than the left. There was nystagmus with a rapid phase to the left, increased when the eyes were directed to the left, and abolished on looking to the right. Slight restriction of the conjugate movement of the eyeballs to the right was present. She had moderate impairment of the conjugate movement upward. Both eyeballs were turned outward. On attempts at convergence there was marked external deviation of the right eye. Both pupils failed to react to light or in accommodation. The disks were elevated to about 3 diopters. There was noticed at this time hypesthesia and hypalgesia in the right upper extremity as well as in the right trigeminal distribution. Vomiting, projectile in type, was present, and headache was intense.

April 27, it was noted that there was a decided recession in the elevation of the disks. April 30, the patient stated that she experienced a slight sensation of light before her eyes. She could tell the difference between day and night. She stated that she could see faint outlines of some objects held before her eyes. She still had projectile vomiting, however, and headache. The peculiar creeping sensation in the right upper extremity persisted.

May 1, she was able to recognize people. The right palpebral fissure was still wider than the left. The left eyeball deviated laterally. There was impaired conjugate movement of the eyeballs upward and to the right. Both pupils were dilated, the right more than the left, and neither reacted to light nor in accommodation. The edema of the left disk had receded considerably. The hemorrhages in the right disk had completely disappeared, while those in the left were apparently disappearing. There was paralysis of the right side of the face of the supernuclear type. The tongue protruded to the left. There was a left Babinski reflex, and a diminution in all deep reflexes. There was moderate paresis in the right extremity. Vomiting persisted, but that was accounted for, to a certain extent, by irritation of the semicircular canal.

May 6, it was noticed that there was considerable improvement in vision, and the patient was able to recognize fingers at a distance of about 1 foot. The pupils reacted sluggishly to light. Right sided paresis and a left Babinski reflex were still present. May 15, the patient stated that she was feeling much more comfortable. Sleep had become more sound. The pupils were regular, and responded promptly to light, in accommodation, and consensually. The right was larger than the left. There was slight lateral deviation of the right eyeball. Both disks were rather pale, with somewhat of a light yellow appearance. Both were elevated to 1.5 diopters. The left disk still showed slight hemorrhage. There was right sided hyperreflexia, and slight ataxia of the right upper extremity was noticed. There was involuntary movement of the right hand. Sensations were still impaired on the right side of the face, but to a lesser degree than on a former examination.

May 30, the right palpebral fissure was slightly narrower than the left; slight deviation of the left eyeball was present; the restriction in conjugate movement to the right and upward was less marked; nystagmus was present on extreme deviation of the eyeballs to the right. The right pupil was recorded as being smaller than the left; both were regular, and responded to light, in accommodation, and consensually. The hemorrhages were completely absorbed from the left eye. Both eyegrounds showed changes in the direction of optic atrophy, the left more than the right.

The patient continued to show progressive improvement. She was permitted to get out of bed on June 5. The movement of the eyeballs became normal, and the pupils reacted promptly; the eyegrounds, however, showed definite evidences of optic atrophy. There was numbness in the right upper extremity, and there was some impairment of power in the right upper

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extremity. The vision gradually improved. The patient was able to recognize common objects, could count fingers at a distance of 1 foot and could tell colors. She was finally discharged from the hospital, June 17, with a diagnosis of epidemic encephalitis.

During her residence in the hospital, the pulse varied between 60 and 100, the respirations between 18 and 30 and the temperature between 98.6 and 101 F. Repeated examinations of urine did not show any abnormal conditions. The blood count showed a moderate leukocytosis with a relatively low polymorphonuclear count. The chemical observations of the blood were normal. Repeated Wassermann tests of the blood and spinal fluid were negative. Therapy consisted in the administration of hypertonic solutions of dextrose intravenously, occasional lumbar puncture, and the administration of typhoid vaccine intravenously. From April 24 to June 6, the patient received fifteen intravenous injections of typhoid vaccine, at first every second day, and later once a week. There was an immediate rise of temperature to 102 or 103 F., and usually accompanied by a chill.

The patient reported to me regularly at least once a month. She was last examined by me, Dec. 22, 1928. She was then in a well nourished condition. The pupils were still widely dilated, but they reacted fairly well to light and in accommodation. There was bilateral optic atrophy. The margins were distinctly outlined, and the disks were a yellowish gray. The vessels appeared in good condition. The visual fields were contracted, but scotomas were not found. The vision was 5/200 in each eye. The patient was able to read the headlines of the newspaper. She still complained of numbness in the right side of the face and in the right upper extremity. There was a left Babinski reflex, incipient masking of the facies and loss of associated movements.

COMMENT

There are several features that make this case an unusual one. The diagnosis of epidemic encephalitis was arrived at after a careful evaluation of all the presenting signs and symptoms. The definite history of exposure to infection, the rapid onset of impairment of vision, the multiplicity of lesions and the changing signs and symptoms forced on me the conviction that the disease process was of an inflammatory, disseminated, irritative nature, rather than of a neoplastic type. While the roentgenogram showed a calcified pineal shadow, I felt that I was not dealing with a true internal hydrocephalus caused possibly by an enlarged pineal gland. The advisability of resorting to ventriculography or encephalography was carefully considered and finally rejected, as it was felt that these procedures might jeopardize the patient's life. The social status of the patient and her home life and surroundings, as well as the repeated negative Wassermann reactions of both the blood and the spinal fluid, excluded neurosyphilis.

The presence of papilledema was an annoying symptom. It is not commonly encountered in cases of epidemic encephalitis, yet its occurrence in this disease has been recorded by such authorities as Buzzard,[1] Spiller,[2] Kennedy [3] and Naccarati,[4] and by others. I have encountered it in nine other cases of encephalitis. In three of the cases [5] the diagnosis of brain tumor had been made and operation advised. The patients refused operation and the subsequent course of events showed that they had epidemic encephalitis. Regarding the explanation for the choked disk, one need only mention the usual theories offered for such phenomena; namely, the Leber toxic theory, the Manz-Schmidt-Rimpler mechanical theory, and, in addition, the anatomic theory offered by Tilney.[6] He described a canal that extends laterally over the optic chiasm and optic nerves from the cephalic extremity of the third ventricle for a distance varying in different subjects. Its lining is formed by ependymal extension of the third ventricle. This canal he named the supra-optic canal. Anything that would cause distention of this canal or affect its drainage might cause pressure on the optic nerves and chiasm, obstructing the drainage system of these structures and producing choked disks. A small amount of exudate might well block these channels; furthermore, if properly localized, it might cause some internal hydrocephalus with resulting choked disk. The retinal hemorrhages were caused by rupture of the distended and engorged veins.

Optic atrophy secondary to optic neuritis and papilledema in encephalitis has been reported in patients observed by Grinker,[7] Hart [8] and others. The occurrence of convulsions in encephalitis is not common.[9] It is more apt to occur in children than in adults. However, it is not only possible but quite probable that focal or generalized convulsions may, for a time, be the sole neurologic manifestation of epidemic encephalitis.[10]

The duration of amaurosis in my patient makes the case particularly unusual. She was totally blind for twelve days. As pointed out by Hall,[11] other observers have found amaurosis early in the disease, but of temporary and brief duration. Vincent's [12] patient could tell day from night. My patient could not do so.

The administration of typhoid vaccine in epidemic encephalitis, especially in the presence of only a slight elevation of temperature, has proved helpful in the hands of many neurologists. Wolf and Globus [13] reported three cases of progressive amaurosis of retrobulbar origin, in two of which evidence pointed to the existence of a subacute epidemic encephalitic process. These patients failed to respond to any other form of therapy, and recovery of vision resulted only after the institution of foreign protein therapy. This subject has been discussed at length by Mueller,[14] and he has called attention to the rôle played by the involuntary nervous system in the body's resistance.

SUMMARY

1. Papilledema is not commonly encountered in epidemic encephalitis.

2. Convulsions likewise are not expectant symptoms in this disease.

3. Amaurosis is a rare finding.

4. In the case here reported, all three symptoms were present. The beneficial effect of foreign protein therapy in epidemic encephalitis is illustrated in this case.

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KRAUROSIS VULVAE

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The object in presenting this paper is twofold. Primarily it is to call renewed attention to an important precancerous condition concerning which there is a surprising lack of familiarity among the profession at large. Secondly, an attempt is made to clarify the troublesome confusion that has arisen from an unfortunate terminology. We have little hope of standardizing this terminology, since in the effort to do so the ablest writers have signally failed. We do hope, however, that by showing in detail wherein the confusion of terms lies, we may give to the reader a distinctive notion of the pathologic changes and clinical course of the disease.

When one searches the literature for some clear explanation of the puzzle, confusion becomes worse confounded. It is at once evident that the disease (or process) that is commonly called kraurosis was originally incompletely described and improperly named. Later writers, observing the clinical and histologic variety of its manifestations, sought to help the situation by adding new technical names or by attempts to establish as separate diseases certain tissue changes that in reality are simply different phases of an identical pathologic process.

An idea of the variegated nomenclature which the discussions of the subject of kraurosis have called forth may be had from the following incomplete list: ichthyosis (Weir [1]); kraurosis (Breisky [2]); leukoplakia (Morris); leukoplakic vulvitis (Berkeley and Bonney [3]); serpiginous vascular degeneration of the nymphae (Tait [4]); leukoplasia (Pichevin and Petit,[5] and the French school); scleroma anovulvaire (Verchere [6]); retractile ecchymotic sclerosis of the vulva (Nonique [7]); trachoma (Johnstone [8]); white vulvitis (Graves [9]); progressive cutaneous atrophy of the vulva (Reed [10]); leukoderma postphlogisticum (Veit [11]); pruritus; leukokeratosis; leukoplakic kraurosis; white kraurosis; leukoma, and leukokraurosis.

In this entire galaxy of terms, not a single one adequately expresses the general process. The word kraurosis, which etymologically describes only one inconstant attribute (shrinking) of the general condition that it designates, has survived all the other terms, many of which are more scientifically accurate. The rough bizarrerie of the word, and the fact that among all the designations it is the only one that is exclusively applied to a vulvar lesion, has made it stick. Next to kraurosis the word leukoplakia is best known, but it is less applicable to a general condition of the vulva since it has a much more definite association with diseases of the mouth, while it conveys an inevitable suggestion of a syphilitic origin that is usually absent in the vulvar disease.

Bowing therefore to usage, and casting philologic purity to the winds, we adopt the time-honored term kraurosis as a general epithet to comprise certain tissue changes of the vulva that under various guises tend eventually to the formation of cancer. There is little hope or need of dislodging the picturesque word kraurosis, which, after all, apart from its etymological limitations, is a vigorous addition to medical terminology. More will be said later on this subject.

PRESENT-DAY SIGNIFICANCE OF KRAUROSIS

The bringing up of an old subject, which after much tiresome early discussion has during the last decade excited little interest, is justified by the new efforts of cancer prophylaxis, which are in a remarkable way revolutionizing the technical practice of gynecology. Kraurosis, even in the earliest years of its observance, was recognized as a precursor of cancer. There is in the entire field of cellular pathology perhaps no better example of a precancerous stage, or at least one that makes itself known by so striking an external appearance. An intimate knowledge of the disease, therefore, offers an excellent opportunity of preventing by timely radical treatment many cases of vulvar cancer.

HISTORY OF KRAUROSIS

The earliest description that we have been able to discover of the general process which we have chosen to call kraurosis appeared in 1875 in a contribution by Dr. Robert F. Weir [1] of the Roosevelt Hospital, New York. Among case reports representing what would now be called leukoplakia of the tongue, Weir described a single case of a similar condition of the vulva. Since little attention has been given in the literature to this report of Dr. Weir's, we shall quote it verbatim:

> Case 3 possesses unusual interest, as it is thought to be the only case yet reported of the disease attacking the vulva. It occurred in a single woman of gaunt, spare habit, aged 61, who was admitted to St. Luke's Hospital during my term of service in 1869, with the history of intense pruritus vulvae running back for many years. She stated that she had had the latter since the age of 16; that many things had been tried and failed; that to obtain relief she had used opiates, at first in moderate quantities, but now requiring 10 to 12 grains of morphine daily to quiet her. So severe had been her sufferings that she underwent an operation for removal by excision and galvanocauterization of the mucous membrane, covering the labia minora, with but moderate temporary benefit.
>
> On examination, the vulva was found to be extremely sensitive; vaginismus was also encountered, but forced introduction of the speculum showed the parts beyond healthy, the uterus being the subject of senile atrophy. Starting from the fourchette, and running upward, nearly covering each of the labia minora, and merging insensibly into the normal mucous membrane, was a long, irregular patch of a pearly blue color, covered by a tenacious secretion of the same color which could be partly wiped off, showing thin, minute islands, some circular, some irregular in shape, through which the reddened subjacent tissue was seen. The adjacent labia majora were also slightly involved. These opaque patches, or rather patch (for it was all one), were appreciably thickened, and very sensitive to the touch. The follicles of the vulva were in many places enlarged and prominent. A variety of local applications were tried without avail, and she left the hospital, to return in 1870, within eighteen months, with well marked epithelioma of the vulva, which part was afterward removed *en masse* by Dr. Gordon Buck.

1. Weir, R. F.: Ichthyosis of the Tongue and Vulva, New York State J. Med., 1875, p. 246.
2. Breisky: Ueber Kraurosis vulvae, eine wenig beachtete Form von Hautatrophie an Pudendum muliebre, Ztschr. f. Heilk. **6**: 69, 1885.
3. Berkeley and Bonney: Leukoplakic Vulvitis and Its Relation to Kraurosis Vulvae and Carcinoma Vulvae, Proc. Roy. Soc. Med. **3**, 1910.
4. Tait, S. L.: Serpiginous Vascular Degeneration of the Nymphae, in Diseases of Women, 1877, p. 43.
5. Pichevin and Petit: De la leucoplasie vulvovaginale, Semaine gynéc., 1897, number 7, p. 48.
6. Verchere: Scleroma ano-vulvaire, Rev. de gynéc. et de chir. abd., 1898, number 5.
7. Nonique: Sclerose rétractile ecchimotique de l'anneau vulvaire, kraurosis vulvae, Thèse de Paris, 1905; Gaz. d. hôp., 1905, number 97.
8. Johnstone: Trachom des Urogenitalskanals, Zentralbl. f. Gynäk., 1895, p. 1143.
9. Graves, W. P.: Kraurosis Vulvae, Gynecology, ed. 4, 1928.
10. Reed: Progressive Cutaneous Atrophy of the Vulva, Am. J. Obst. & Gynec. **5**: 556, 1893.
11. Veit, J.: Kraurosis vulvae (Leukoplakia vulvae), Handbuch der Gynäkologie, ed. 2, **4**: 611, 1910.

This excellent description pictures a case which would now be called by many leukoplakia vulvae, but which comes under our general title of kraurosis. Weir has graphically described the pruritus, whiteness and chronic inflammation of the tissues characteristic of kraurosis. Though no direct mention of shrinking or retraction is mentioned, it may easily be inferred from the context. The relationship to cancer is clearly brought out by the outcome of the case.

The next reference to the disease that we have noted is by Schroeder,[12] who, in describing the end-results of pruritus, says:

> After a longer duration of the affection, characteristic changes take place. In addition to the excoriations caused by scratching and rubbing, one finds a visible swelling and infiltration of the vulva resulting from the continuous irritation. The skin is characteristically gray as if powdered over with meal-dust (Mehlstaub). It has lost its elasticity, and exhibits a distinctive stiffness and disappearance of the folds.

No mention is made of shrinking. The description suggests an early leukoplakic stage of the disease.

Many ascribe to Lawson Tait the primary honor of discovering the disease. Tait, in 1877, described a condition of the vulva which he called "serpiginous vascular degeneration of the nymphae." We have carefully read his description and cannot agree that it corresponds to the precancerous lesion which we call kraurosis. Tait's disease seems rather to have been one of marked sclerotic genital atrophy, similar to the condition to which Berkeley and Bonney have assigned the word kraurosis.

The discovery of kraurosis as an individual disease is attributed by most authors to Breisky, who, in 1885, incompletely described the lesion and gave to it its much discussed name. Breisky, notwithstanding the credit that is due him for his epochal contribution, was nevertheless responsible for the tangle in which the subject later became involved. He described in detail the two most essential characteristics, namely, retraction of the tissues and whitening of the integument; but since he regarded the first as the more distinctive, he applied to the disease the name kraurosis, which he fashioned from the Greek verb *κραυρόω*, to shrink.

The following translation gives in part Breisky's classic description:

> On the external genitals of adult females I have observed in rare cases—twelve in all—characteristic changes of an atrophic shrinking of the skin, which is located on the vestibule, the labia minora, together with the frenulum and prepuce, the inner surfaces of the labia minora as far as the posterior commissure and the perineum. The lesser lips are scarcely visible. From the mons veneris to the urethral orifice the integument is smooth, without a trace of a fold, the frenulum and prepuce being entirely absent. Beneath, there runs down the middle of the vestibule a white cicatricial, raphelike line. The clitoris lies behind this shrunken skin, either entirely concealed or beneath a small round opening of the integument that represents the remains of the frenulum and prepuce. On separating the labia one sees a stiff transverse fold above the meatus. In the posterior part of the vulva, analogous signs of retraction are present, though in a less pronounced degree. The consequence of this atrophy is a marked vestibular stenosis which in our opinion merits a clinical dignity, since it interferes with childbirth and coitus.

In the foregoing paragraph Breisky described in accurate detail that element of the process (retraction) which seemed to him so constant and important that he gave the name kraurosis to the malady. If he had stopped there, as Jayle[13] has pointed out, he would have avoided all the embarrassment that later ensued.

> But Breisky [in the words of Jayle], observing a certain clinical variety in kraurosis, has taken the part for the whole, a frequent error in science, though in this instance an excusable one, since it was a case of creating a new clinical type. To a fundamental constant character he has jointed a second variable by attributing to it an equal importance; he has doubled the capital pathognomonic symptom, namely, that of *atrophic retraction*, with an accessory symptom, that of *white coloration* of the skin. [That we do not agree with Jayle's statement entirely will appear later.]

Breisky's description of the secondary characteristic, whiteness, is as follows:

> The skin, in the areas where the retraction is the most pronounced, is white and dry, provided in places with a thick, somewhat roughened epidermis, as for example near the clitoris, prepuce and frenulum, while the neighboring cutaneous parts are shiny and dry, pale, reddish-gray, with washed-out white spots, and distended capillaries.

This second part of Breisky's description of kraurosis corresponds accurately with that of leukoplakia, a tissue change which, as we have shown, was well known long before the word kraurosis was invented.

Thus, to recapitulate, it is plain that Breisky in first describing the clinical type of a vulvar disease emphasized two visible attributes and gave to the disease the Greek name of one of them. Confusion has arisen from the fact that some authors, adhering to the literal meaning of kraurosis, have sought to make of the two attributes two separate diseases, one characterized by retraction and the other by whiteness, though most authors agree that they may occur together, or that one may be superimposed on the other. Other writers believe that the two appearances are simply different phases of an identical process. We hope later to present clinical and histologic evidence in confirmation of the latter view.

In order to present the subject fairly, a summary of the controversial points will be given. But first a clearer definition of leukoplakia must be presented.

The earliest recognition of the significance of leukoplakia of the tongue apparently dates back to 1837, when it was mentioned by Samuel Plumbe[14] as being of the same nature as ichthyosis of the skin. In 1838, Buzenet[15] described it. Credit for an exact delineation of the malady is usually given to James Hulke,[16] an Englishman, who in 1863 gave to it the provisional name of ichthyosis of the tongue, and to Bazin, who in 1868 called it psoriasis of the tongue. Neligan[17] deserves the credit for having, in 1862, pointed out the tendency of the process to become epitheliomatous. As the disease was more carefully studied, other names were applied, such as tylosis linguae (Ulmann), and keratosis linguae (Kaposi). Schwimmer,[18] in 1877, was the first to propose the name leukoplakia (white plaques), by which it is most commonly designated at present. Vidal modified this to leukoplasia. Besnier, in 1891, objected to the latter term on the ground that it was too general and that it did not imply the keratotic change of the epithelium which gives to the tissue the white appearance. He therefore proposed the more accurate name leukokeratosis.

12. Schroeder: Handbook of Gynecology, 1884.

13. Jayle, F.: Le kraurosis vulvae, Rev. de gynéc. et de chir. abd. **10:** 633, 1906.
14. Plumbe, Samuel: A Practical Treatise on the Skin, London, 1837.
15. Buzenet: Plaques des fumeurs, Thèse de Paris, 1858. Jayle and Bender (footnote 19).
16. Hulke, James: Leukoplakia, M. Times & Gaz., March 11, 1865.
17. Neligan, J. M.: Cancer and Leukoplakia, Dublin Quart., 1862. Jayle and Bender (footnote 19).
18. Schwimmer: Die idiopathischen Schleimhautplacques der Mundhöhle, Vrtljschr. f. Dermat. u. Syph., 1877.

All of the earlier observations of leukoplakia were limited to lesions of the tongue. Later it was recognized that the same process may appear in other localities, notably in the female genitalia. As we have already mentioned, Weir was the first to describe leukoplakia of the vulva and its relationship to cancer.

After the appearance of Breisky's famous paper, in which a condition of leukoplakia was definitely described as an integral part of kraurosis, the two processes became greatly confused. Writers were divided into two schools, those who regarded kraurosis and leukoplakia as two distinct diseases, and those who believed them to be different manifestations of an identical pathologic process. The literature on the subject was copious. Numerous references to this literature are made in the present article, but we shall devote our attention chiefly to four writers whose contributions are especially representative.

VARIOUS VIEWS HELD WITH REGARD TO KRAUROSIS AND LEUKOPLAKIA

The view that kraurosis and leukoplakia are separate diseases has been best presented by Jayle and Bender,[19] and Thibierge [20] among the French, and by Berkeley and Bonney [3] among English gynecologists. Of all the authorities who favor a dual nature of the two maladies, Berkeley and Bonney take the most extreme position. Their description of leukoplakia, or, as they term it, leukoplakic vulvitis, is very precise. It may be thus abstracted:

Leukoplakic vulvitis is a chronic inflammatory condition of unknown origin characterized in its early stages by marked hyperemia and cellular activity, and in its later phases by marked epithelial hypertrophy, and a thickened, sclerosed and retracted condition of the subepithelial tissue.

The whole of the vulva may be implicated *with the exception of the vestibule and orifice of the urethra, which are never affected.* It may extend laterally to the folds of the thigh and posteriorly to the external perineum and the skin around the anus. There are four clinical stages:

First stage: Reddening, swelling, excoriation and dryness.

Second stage: Retraction with thickening; decrease in size of the greater and lesser lips, and change of color from red to *white.*

Third stage: Cracks and ulcers with discharge and bleeding; tendency to carcinomatous change.

Fourth stage: Complete involution; vulval surface smooth, shiny and white; disappearance of labia minora and clitoris from contraction of the subethelial tissues; cessation of pruritus.

The symptoms are intense pruritus in the second and third stages and pain with acute sensitiveness in the third stage from the exposure of nerve endings in the cracks and ulcers. There are no symptoms in the fourth stage.

The preceding description corresponds to what clinicians generally, at least in America, call kraurosis, or, if they are more exact, kraurosis with leukoplakia. It includes the conception, handed down and modified from Breisky, of an inflammatory origin (Eccem), whitening of the epidermis, deep shrinking of the tissues, and disappearance of the vulvar folds, with pruritus as a distinctive symptom.

Berkeley and Bonney, however, reject the term kraurosis entirely as applicable to this condition and reserve the word exclusively for a disease which they describe in effect as follows:

Kraurosis vulvae consists of an atrophic condition of the vulva associated clinically with stenosis of the vaginal orifice and pathologically with certain changes in the dermis. It may involve all the surface of the vulva as far as the skin borders of the labia majora, and the skin of the perineum and anal region.

Kraurosis vulvae is divided into two stages:

First stage: The mucocutaneous surface, red and glistening, is dotted over with small patches varying in color from bright red to purple. The urethral orifice is in a caruncular condition.

Second stage: The mucocutaneous surface becomes yellow like that of a fatty liver. The surface ridges are obliterated. The vaginal orifice is greatly contracted; the labia minora and clitoris disappear; the mons veneris atrophies; the pubic hair breaks off or falls out. The condition is one simply of retraction and thinning. Pruritus is one of the rarest symptoms, the chief complaint being that of dyspareunia. In the first stage the parts are sensitive, especially to the passage of urine.

The foregoing description of kraurosis, which repeats that of Thibierge, corresponds clinically to what most gynecologists call marked, or progressive, genital atrophy; and the authors still further strengthen this analogy by their statement of the etiology. Admitting the influence of inflammation, they emphasize the importance of the loss of ovarian function by grouping their cases as (1) those in young sterile women; (2) those occurring at or after the menopause, and (3) those occurring after operations involving ablation of the ovaries.

Berkeley and Bonney exclude from the category of kraurosis all cases that exhibit leukoplakic tendencies by the statement that the so-called white kraurosis is undoubtedly a misnomer for leukoplakic vulvitis, a lesion which they state is clinically and histologically entirely distinct from kraurosis. The inevitable inference is that Breisky's disease, to which he was the first to give the name kraurosis, was not really kraurosis because, as we have pointed out, he described as an integral element of the disease changes that can be interpreted as nothing other than leukoplakia. To recapitulate, Berkeley and Bonney's kraurosis is a rare condition of atrophy of the vulva that is all but symptomless and does not lead to cancer. Its chief clinical significance is that it causes dyspareunia and obstruction to birth and coitus, on account of stenosis of the vaginal orifice.

Jayle, though affirming that kraurosis and leukoplakia are distinct pathologic processes, nevertheless takes a somewhat broader view of the subject than Berkeley and Bonney, and admits the frequent combination of the two conditions. Jayle's ideas elaborated with unusual clearness in a series of articles are well epitomized in the following set of conclusions (translated):

1. Under the influence of various causes the mucocutaneous integument of the vulva, and particularly of the labia minora, the prepuce, the clitoris and the vaginal orifice, may be affected by a *retractile sclerosis.*

2. The name kraurosis vulvae, already consecrated by usage, can be given to this sclerosis.

3. Kraurosis vulvae is defined as a morbid state characterized, clinically, by the atrophy and retraction of the mucocutaneous integument of the vulva, particularly of the introitus; and histologically, by sclerosis of the dermis with *variable lesions of the epidermis.*

4. The term kraurosis is not synonymous with the term leukoplasia.

5. Kraurosis is frequently associated with leukoplasia; that is to say, it may precede it, accompany it, or succeed it. Thus there is found a special variety of kraurosis, which I propose to call *white kraurosis,* or leukoplasic kraurosis, or Breisky's kraurosis.

6. Kraurosis is often complicated by inflammatory lesions, and in contradistinction to the preceding form, I give to this clinical variety the name *red kraurosis.* Red kraurosis com-

19. Jayle and Bender: La leucoplasie de la vulve, du vagin et de l'utérus, Rev. de gynéc. et de chir. abd. **9**: 963, 1905.

20. Thibierge, G.: Étude clinique sur le Kraurosis vulvae, Ann. de dermat. et syph., series 4, **9**: 1, 1908.

prises the vascular or hyperemic type (Lawson-Tait's kraurosis) and follicular kraurosis.

7. Kraurosis is observed after castration and therefore merits the name postoperative kraurosis.

8. Under certain conditions there appears in association with atrophic changes in the ovaries a senile or presenile kraurosis.

9. Postoperative kraurosis does not appear to favor the development of cancer. [We take exception to this statement.]

10. Senile or presenile kraurosis coincides sometimes with the appearance of cancerous lesions.

In the foregoing clinical summary of the subject, kraurosis is depicted as a general atrophic process, one phase of which may be manifested by leukoplakic changes of the epidermis which create a special predisposition to cancer. Jayle, in other words, regards leukoplakia as a secondary change in a primary disease, kraurosis, the two processes, however, being distinct entities.

Still another view is that held notably by Szàsz [21] and Veit,[11] in which kraurosis is looked on as an end-product of leukoplakia, the two being regarded as different stages of an identical process. By this view leukoplakia is not a special disease entity but is rather a type of cell change that mucous epithelium may undergo in its reaction to certain irritants. This

Comparison Between Leukoplakia and Kraurosis According to Szàsz

Leukoplakia	*Kraurosis*
1. Hyperkeratosis and parakeratosis. Horny layer shows distinct stratification. Much eleidin.	1. Keratosis more or less well developed, but the horny layer is compact without stratification. Eleidin sparse.
2. High grade acanthosis with broad, voluminous interpapillary spaces.	2. Atrophic, thin rete malpighii. Interpapillary spaces absent.
3. Stratum granulosum has eight to ten rows of cells.	3. Stratum granulosum atrophic having scarcely two to three rows of cells.
4. Basal cell layer cylindric.	4. Basal cell layer cuboidal or flat.
5. Papillae long and slender.	5. Papillae absent or rudimentary.
6. Loose lymphatic system. Connective tissue loose, relatively poor in elastin and rich in collagen.	6. Connective tissue firm, almost free of collagen, rich in degenerated elastin.

typical reaction is encountered in numerous mucous surfaces of the body, most commonly in the mouth, less frequently on the vulva. It is also seen on the glans and prepuce of the male, the anorectal tissue, the urethral mucous membrane, the mucosa of the nose, pharynx, larynx and trachea, and finally the mucosa of the vagina, cervix and endometrium. Thus it may appear not only on squamous but also on cylinder and ciliated epithelium.

In whatever situation it is found, it is an undisputed precursor of cancer. In its typical form it exhibits a hypertrophic condition of the epithelium, associated with chronic inflammatory changes in the dermis. Kraurosis, on the other hand, represents a regressive change and, in the opinion of Szàsz, who finds the two conditions almost invariably associated, is the involuted final product of the leukoplakic process.

Leukoplakia, according to Szàsz, Jung,[22] Veit and others is the result invariably of some irritation, wherever it is located. When it occurs on the vulva, it is signalized by pruritus which as a result of continual rubbing and scratching still further encourages the anatomic changes that may eventuate in cancer or in a complete kraurotic involution. Szàsz finds the same change to kraurosis in old leukoplakic areas of the tongue and mouth.

HISTOLOGIC DIFFERENTIATION OF KRAUROSIS AND LEUKOPLAKIA

So far we have said little of the histologic differentiation between kraurosis and leukoplakia, having reserved discussion of it until we reviewed Szàsz's work because his standardization of the subject is most generally accepted and accords closely with our own observations.

The accompanying parallel comparison between the two conditions taken from Szàsz is frequently quoted.

Szàsz sums up his estimate of leukoplakia and kraurosis somewhat as follows:

Certain chronic stimuli (abnormal secretions, parasites and their biologic products) exerting their influence on the vulvar mucous membrane for a long time keep the tissue in continual irritation, which may be associated with the sensation of itching and may be manifested by different forms of inflammation.

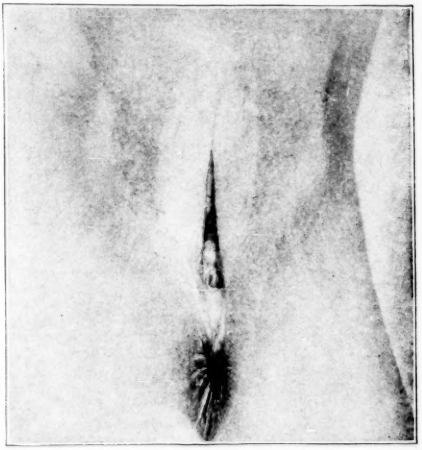

Fig. 1.—White vulvitis (meal-dust leukoplakia) accompanying an advanced carcinoma of the cervix. When the patient was first seen, this condition was diagnosed as kraurosis and leukoplakia. After radium treatment of the cervical carcinoma, the vulva assumed a healthy appearance and remained so until the death of the patient eleven months later. This case illustrates well the leukoplakic changes that may be induced on the vulva by an irritating discharge.

Among these very commonly is leukoplakia or leukokeratosis, the histologic characteristics of which are collagen-rich, elastin-poor tissue, more or less pervaded with leukocytes; greatly hypertrophied rete malpighii; high grade acanthosis, broad plump interpapillary spaces; extraordinarily developed keratin layer. In the corneal layer there is much eleidin with parakeratosis and hyperkeratosis and marked lamination of the cells. *This is a progressive process.*

Leukoplakia (leukoplasia) is an affection of long duration which has two different but natural evolutionary paths: the one leads to kraurosis by regression; and the other to carcinoma by progression.

Kraurosis is manifested clinically by rigidity and hardness of the vulvar mucous membrane and by marked narrowing of the introitus. Its histologic characteristics are a connective tissue, collagen-poor or free, degenerated elastin-rich, disappearance of interpapillary spaces, atrophy of the rete malpighii, disappearance of keratin, compactness of the hypertrophied horny layer, and failure of lamination of the same. *A regressive process.*

21. Szàsz, Hugo: Ueber leukoplakische: Veränderungen der Vulva, ihre Beziehung für Kraurosis derselben nebst zwei Fällen von Vulvocarcinom, Monatschr. f. Geburtsh. u. Gynäk., 1903.

22. Jung, P.: Die Aetiologie der Kraurosis vulvae, Ztschr. f. Geburtsh. u. Gynäk. **52**: 13, 1904.

Thus Szàsz limits the word kraurosis in its strictest sense to the end-product of a long process of irritation, inflammation, tissue hyperplasia and regressive involution.

One of the most illuminating treatises on kraurosis is found in Veit's Handbook, written by J. Veit himself. Like Szàsz, he is convinced of the identity of leukoplakia and kraurosis. He recognizes an inflammatory origin of the disease and asserts that the inflammation is as a rule long-standing, though it may be short and more or less acute, as in the cases of Breisky, in which the kraurotic process appeared in young women soon after parturition. Veit shows by analogy that chronic inflammatory irritation leads both to shrinking of the deeper dermal layers (kraurosis) and to heaping up and loss of transparency of the epithelial layers (leukoplakia). Leukoplakia in the vulva as in other parts of the body represents a lack of definite healing. It is seen on the edges of healing ulcers in any part of the body, as in long-standing suppurating wounds of the abdomen. Veit looks on pruritus as the most important etiologic factor in the production of leukoplakia of the vulva. The repeated small wounds from scratching and the fresh infections either from scratching or from the original source of inflammation (e. g., abnormal secretion) prevents complete healing and leads to heaping-up, keratosis, and whitening of the epithelium. The same constant irritation produces the shrinking, density and retraction of the dermal layers and results in the specific condition commonly called kraurosis.

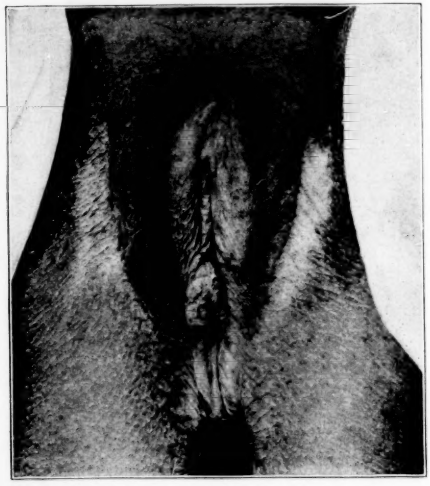

Fig. 2.—Typical kraurosis vulvae and leukoplakia with papilloma: The labia are grayish white, dry and leathery; hair is absent. A papilloma projects from the right side of the fourchette and illustrates the tendency of the condition to hyperplastic growth.

The question of pruritus in the etiology of kraurosis has aroused much discussion. Breisky in his cases found that it played an unimportant part. Berkeley and Bonney find that it cuts small figure in the limited disease that they call kraurosis. Veit and many other authors, including ourselves, find, on the other hand, that in the disease which they conceive to be kraurosis it is an almost constant and usually a most distressing symptom. Many patients, to be sure, deny the presence of itching, but, as Czempin [23] and Veit have pointed out, this denial is due to the fear of creating a suspicion of masturbation. We have been able to verify this in a striking manner in more than one case. Pruritus is frequently both a cause and a result of onanism, and the patient naturally associates the two. The words pruritus and prurience denote a similarity of sensation. Every gynecologist who studies the psychology of his patients will agree that the consciousness of masturbation constitutes in woman the most profound sense of shame. Hence the denial of pruritus, even when it is an agonizing symptom, is not to be wondered at. It is just this peculiar feeling of shame that leads the largest percentage of women suffering from leukoplakia and kraurosis to consult a physician of their own sex.

The concluding paragraph of Veit's thesis, though it anticipates what we shall have to say on treatment, expresses in a few words the broad clinical significance of kraurosis:

> Vulvitis demands a healing of the process which induces it; from vulvitis pruritus may be developed; pruritus also demands a healing of the underlying process and a palliative treatment of the itching; if it has come to a specific change in the skin with shrinking (i. e., kraurosis) and leukoplakia of the vulva this lesion demands an excision of the affected parts of the skin of the vulva. One hopes by this means to prevent a cancer.

Recent literature on the subject of kraurosis has been meager, and little new knowledge of the disease has been added. Among the latter contributions, those of Taussig,[24] an eminent authority on diseases of the vulva, have been the most noteworthy. Taussig, irritated by the ambiguity that still clings to the term kraurosis, discards it altogether. If it is to be used at all, he recommends that it be limited as suggested by Berkeley and Bonney to the simple form of vulvar atrophy that is unattended by leukoplakic changes.

Fig. 3.—Leukoplakia of the vulva: The epithelium is hypertrophied and its superficial layers are cornified and stratified. The stroma is dense, does not contain blood vessels and is infiltrated with round cells. There is one hair follicle in this section.

This condition he prefers to call atrophy-sclerosis of the vulva. For the disease described inadequately by Breisky and popularly known as kraurosis, he follows

23. Czempin: Kraurosis vulvae, Berl. klin. Wchnschr., 1896, p. 52; Kraurosis vulvae und Juckreiz, Ztschr. f. Geburtsh. u. Gynäk. **34**: 460, 1896.

24. Taussig, F. J.: Contributions to the Pathology of Vulvar Diseases, Am. J. Obst. & Gynec. **6**: 407 (Oct.) 1923; Diseases of the Vulva, 1924, p. 91.

Berkeley and Bonney and employs the expression leukoplakic vulvitis. This expression has special merit since it implies both the inflammatory origin of the diseases and the presence of those epithelial changes which, by their white appearance, are the warning signal of threatening cancer. By the omission of the word kraurosis, allowance is made for the fact that leukoplakic vulvitis may occur without the shrinking of

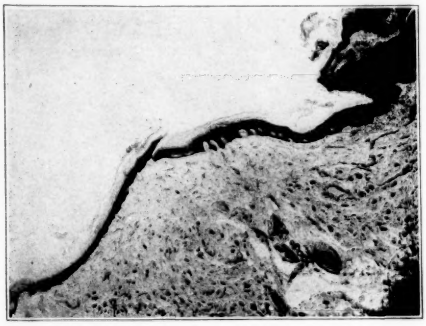

Fig. 4.—Kraurosis (on left) and leukoplakia (on right). On the left the epithelium is thin and its papillae are flattened out. The stroma is atrophied. On the right there is marked hypertrophy and cornification of the epithelium, beneath which the stroma is infiltrated with round cells.

tissues, a point of importance that we shall take up later in the review of our own cases. Taussig's conception of the pathology of leukoplakic vulvitis corresponds in a modified way to what Jayle calls leukoplakic kraurosis. He divides it into three stages:

In the first stage the vulva has a reddened swollen appearance (the "red kraurosis" of Jayle). Microscopically there is pronounced acanthosis, increased keratosis, and infiltration of round cells and leukocytes. In the second stage, about a year after the initial appearance of the disease the skin becomes white with stiff edges, and is often excoriated from scratching. Microscopically there is still marked acanthosis and heaping up of the keratin layer, with a thick deeply staining layer of eleidin cells. The connective tissue shows the picture of chronic inflammation with scattered areas of collagen, and numerous plasma cells. [This is the progressive stage of Szász and Veit.]

In the third stage the skin has assumed the appearance of thin parchment, pearly white, cracked and dry. The epithelial layer is low, papillary processes are absent, the keratin layer is usually a half or a third as thick as before, the eleidin cells are less numerous and there was a peculiar frayed-out appearance of the basal cells of the epidermis. In the connective tissue is seen a glairy-looking collagenous material replacing the connective tissue, with here and there islands of round cell infiltration. [Taussig's third stage of leukoplakic vulvitis corresponds to what Szász calls kraurosis *sensu strictiori*.]

Taussig emphasizes the absence of elastic tissue in the subepithelial layers of the dermis, a condition that becomes increasingly marked as the disease progresses. He believes that this absence of elastic fibers is due primarily to a loss or a special disturbance of the ovarian secretion, and that it occasions a train of skin changes—inelasticity, friability, cracking, infection, chronic inflammation, pruritus and leukoplakia—that constitute the disease leukoplakic vulvitis.

RECOMMENDATIONS AS TO TERMINOLOGY

A review of the literature indicates that there is a well defined disease of the vulva, the clinical manifestations and pathologic changes of which are well known, but that this disease has never yet been endowed with a universally accepted name. Consequently great confusion exists regarding a disorder that is rapidly assuming new clinical importance.

Can anything be done to establish for it a standardized nomenclature for the benefit of the student? Probably not at the present time. The simplest method would be to discard entirely the word kraurosis, as Taussig recommends, and to adopt the comprehensive expression leukoplakic vulvitis. But this is not an easy matter for, as Taussig says, nicknames cling to diseases as they do to human beings, and the word kraurosis has been consecrated by such long usage that it will be difficult to exterminate it. But if the word is to be used there should be some accepted uniformity in its meaning. It would seem most logical to continue to use it in the sense intended by its inventor. Breisky gave kraurosis to the profession as the name of a disease, not a symptom. He described the disease as a distinct entity, and one that is more or less clearly recognized at the present day. It seems futile to shear the word entirely of its original significance, as Berkeley and Bonney, Thibierge and others have done, and make it a useless and unrecognized synonym for genital atrophy. Nor is there much point in limiting the word to a condition that precedes leukoplakia, or to one that is its end-product, as Jayle and Szász have done. Let kraurosis be the "nickname," rather, of the whole disease, which, beginning with an irritative vulvitis, is signalized by pruritus, undergoes superficial epidermal changes in the form of leukoplakia and deeper dermal changes that result in shrinking and retraction, and terminates finally in a cancer or in a completely regressive stage that is not entirely immune to cancer.

With the present knowledge of the disease, the prodromal inflammatory stages cannot always be definitely diagnosed. Thus a chronic vulvitis which, if neglected,

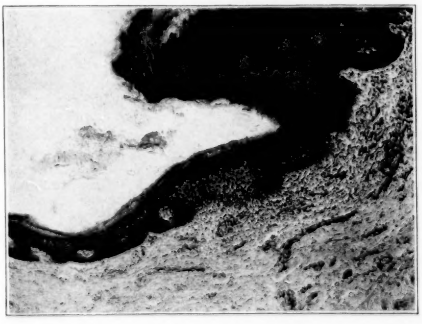

Fig. 5.—High power view of upper right corner of figure 4, showing in more detail the characteristics of leukoplakia and the region of transition to kraurosis.

is likely to become a kraurosis may, by removal of the cause of irritation, be cured before essential kraurotic changes make their appearance. Or a chronic vulvitis may even develop leukoplakia, especially that of the meal-dust type, and still be curable by palliative measures and the removal of the irritating cause. Such a condition may properly be called leukoplakic vulvitis or, by using the word kraurosis in its broader sense, a

prekraurotic stage, or even an early kraurosis. When, however, the dermal and epidermal lesions are no longer amenable to treatment or, in other words, have become permanent, the disease is now a true kraurosis, cancer is imminent and radical surgical treatment is imperative. It seems to us that by employing the terminology in this way the grave significance of the disease may best be impressed on the medical student and the general profession.

To those to whom the word kraurosis is etymologically unpalatable, we recommend the expression leukoplakic vulvitis. To those who can swallow kraurosis but require for it some seasoning, we recommend such expressions as leukoplakic, or white, kraurosis; or even leukokraurosis, a brand new contribution which we offer to the already overloaded nomenclature.

ILLUSTRATIVE CLINICAL DETAILS

For many years, at the Free Hospital for Women, the word kraurosis has been used in the broad sense indicated in the preceding section; that is to say, a diagnosis of kraurosis has been made when permanent kraurotic (including leukoplakic) changes have been noted in the vulva. In order to gain, if possible, some additional knowledge of this important disease, Dr. George V. Smith of the hospital staff has made a clinical analysis of the records of fifteen patients seen at the hospital, and a histologic review of kraurotic tissues sent to the laboratory from patients operated on at the Free Hospital and elsewhere.

Space does not permit complete details of the fifteen clinical records, but a brief summary of the more important items may be of interest.

Marital.—Five patients of this group had never been pregnant; ten had had from two to thirteen children, the average number of children for each married patient being 5.4. These figures are somewhat surprising, but they may indicate that frequent child-bearing often induces excessive atrophic changes later in life.

Past Operative Histories.—Three patients had had both ovaries removed from five to twenty-five years previously; two had had plastic vaginal operations; two had had operations for anal fistulas, and three had had dilation and curettage.

Age Incidence.—The youngest patient was 37 years old, the oldest 70; the average age was 55.6 years.

Menstrual.—Two patients had not reached the menopause, both having suffered from metrorrhagia; thirteen had had the menopause from one to twenty-five years previously, the average being 11.3 years. One patient had had a radium menopause. (We have recently seen a private case, not in this series, of kraurosis following a radium menopause.) The last two items illustrate the probable influence of ovarian deficiency as an etiologic factor, a point mentioned by many authors.

Symptoms.—The symptoms complained of were, in order of frequency, burning micturition, pruritus, pain and irritation of the vulva, vaginal discharge, burning of the vagina, and burning defecation. The duration of symptoms was from two months to nine years, the average being 3.3 years.

Topical Examination.—In addition to the kraurotic condition of the integument, which formed the basis of the diagnosis, other concomitant observations noted were: genital atrophy, tight introitus, vaginal adhesions, ulcerations and cracks of the vulva, tumor of the labium, and fistula in ano. These are typical of the lesions that we have described in our historical review of the disease, and indicate in general progressive atrophy, imperfect drainage and irritative inflammation.

HISTOLOGIC STUDY

For the purposes of histologic study, Dr. Smith had for material the specimens from eighteen partial or complete vulvectomy operations performed for the cure of kraurosis (carcinoma not being present). If the classic histologic differentiation between kraurosis and leukoplakia (Szász, Jayle, and others) is accepted, the results of this study reveal the futility of trying to make two separate diseases of these processes. We must either agree with Szász and Veit that the two conditions are different phases of an identical process or, like Taussig, discard the concept and term kraurosis altogether, or, like Berkeley and Bonney, apply it to a condition entirely different from that for which it was originally intended.

The following abstract from Dr. Smith's summary of his observations in the eighteen cases will explain the situation:

When a condition of kraurosis exists, the vulva has a pale-white or gray-white appearance, either in patches or over its entire surface, depending on the stage of the disease. It may be smooth or wrinkled and there may be small or large raised areas. The integument is tough, leathery and dry. Hairs are almost completely absent. Microscopically the squamous epithelium is, contrary to expectation, thinner than normal, its papillae being short and thin or completely flattened out. The corium is very dense, elastic tissue is entirely absent, glands and hair follicles are wanting, blood capillaries are sparse, and throughout there is a greater or less round-cell infiltration. The microscopic observations thus explain the gross appearance. The whiteness is due chiefly to the dense anemic corium; the toughness and leathery consistency are due also to the density of the corium, which still further accounts for the loss of glands and the dryness of the surface. During the examination of a section which shows both normal vulva and the transition to kraurosis, it is not difficult to find large dilated sweat and sebaceous glands, the result apparently of duct strangulation by the corium. Later, at a more advanced stage, these glands disappear, presumably from pressure and lack of blood supply.

Thus that part of the process which has been specifically called kraurosis in the narrower sense is, as many have noted, dermal in character, the characteristic change being seen in the corium.

Leukoplakia in its classic sense is applied to a condition in which the squamous epithelium is greatly hypertrophied and keratinized. The papillae are larger and thicker than normal and reach well into the corium. It appears grossly on the vulva in the form of raised white scaling patches or more diffusely like meal-dust. The whiteness is more intense than in kraurosis. The corium is denser than normal but less so than in kraurosis; the blood capillaries are infrequent, glands and hair follicles are sparse and atrophied, elastic tissue is decreased, and there is always marked infiltration of round cells.

In other words, the only essential difference between so-called leukoplakia and kraurosis is the greater activity in the former of the squamous epithelial layer, which, as we shall see, has an important bearing on the development of cancer.

Further study of our series of specimens reveals that the raised patches which were mentioned in the description of kraurosis are areas of leukoplakia. They are just as often found on a dense corium that is devoid of glands, hair follicles and blood vessels (essential kraurosis) as they are on a corium that has a fair blood supply and a few atrophic glands.

Thus, as Smith observes, it would seem that leukoplakia may follow or precede a kraurosis, although this is not proved. When leukoplakic epithelium rests on a kraurotic corium, it is conceivable, of course, that the corium changes preceded the epithelial changes in point of time. On the other hand, it may be that the epithelium is changing from a regressive state to one of

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increased activity that may eventuate in cancer. Our observations tend to show that both processes occur.

Finally, Smith makes the notable observation that, in every one of the eighteen specimens examined, both leukoplakia and kraurosis (interpreted in the classic sense) were found. The juxtaposition of the two processes is well illustrated in figure 5.

Fig. 6.—Carcinoma of the vulva (from same patient as preceding two photomicrographs). In studying the sections from this vulva, the transition from leukoplakia to carcinoma could easily be seen.

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RELATIONSHIP OF KRAUROSIS TO CANCER

The dénouement of the kraurotic drama is cancer. As we have already pointed out, the disease which we have chosen to designate as kraurosis (and which includes leukoplakia) has been regarded since its earliest recognition as a precursor of cancer. Weir's original case (1875) of "ichthyosis vulvae" finally became malignant. Other earlier writers described cases of vulvar cancer developing on a leukoplakic base. Of these may be mentioned Reclus [25] (1887), Besc (1888), Dauriac (1888), Schwarz (1893), Maurel (1888), Butlin [26] (1901), Pichevin and Petit [5] (1896), Perrin [27] (1891), Monod (1896), Bex (1896), Carrucci (1899, cited by Szàsz), and many others. Berkeley and Bonney, and Taussig emphasize the tendency of leukoplakic vulvitis to become malignant. Berkeley and Bonney say: "The relation borne by leukoplakic vulvitis to carcinoma is closer than that of any other pathologic lesion with the exception of x-ray dermatitis."

Nothing further need be said regarding the relationship of leukoplakia to cancer, but when the relationship of cancer to kraurosis is considered the troublesome ambiguity of the word is again encountered. Those who, like Berkeley and Bonney, and Thibierge, limit kraurosis to a simple sclerotic atrophy due to ovarian deficiency, deny that it ever develops malignant changes. Berkeley and Bonney say, "We know of no instance where kraurosis vulvae has been associated with carcinoma of the vulva, and the disease has in our opinion no relation to it." Those who identify the two conditions (Veit, Szàsz) or who differentiate but ally them (Jayle) take different views. Veit remarks, "It is an important observation that cancer may develop on a kraurotic as well as on a leukoplakic base." Jayle says, "Leukoplasic kraurosis [an expression that is equivalent to our general use of the word kraurosis] is complicated with cancer in about a tenth of published cases." Szàsz, who looks on kraurosis as the end-product of leukoplakia, says, "kraurosis, sensu strictiori, represents an entirely obsolete process, from which the development of a carcinoma is very improbable."

In order to throw some light on this problem, which is obviously of great clinical importance, Dr. Smith has made a searching histologic study of material available in the laboratory of the Free Hospital for Women. The material consisted of twenty-one specimens of vulvar cancer, removed either by operation or for biopsy. In these twenty-one specimens of cancer, Smith found leukoplakia sixteen times and kraurosis (in the classic sense) fourteen times. In those instances in which leukoplakia and kraurosis were not found, the carcinoma was very far advanced or the tissue was meager (biopsy specimens) or the gross specimens were too old for accurate microscopic study. This evidence proves sufficiently well that cancer of the vulva is, at least in the majority of cases, preceded by leukokraurotic changes.

Further search was made in order to determine whether cancer may develop on a kraurotic base (in the stricter sense) as well as on a leukoplakic one. In all but two instances the matrix of the cancer was obviously leukoplakic. In the other two the cancer was so closely associated with a true kraurosis that it presented convincing, though perhaps not conclusive, evidence of having developed from it. But the question whether kraurosis in the stricter sense may or may not develop cancer is not of vital importance, for we have seen that in our series, diagnosed as kraurosis, leukoplakic areas, not always distinguishable by the naked eye, were present in every instance, and were from what we know of the process entirely capable of producing a cancer.

Fig. 7.—Leukoplakia and carcinoma of the vulva: The epithelium is hyperttrophied; the stroma is dense and infiltrated with round cells. As in figure 6, the carcinoma is of the epidermoid type.

TREATMENT

In the prekraurotic stage of vulvitis, with its symptoms of pruritus, burning micturition and the rest, the primary treatment consists in finding the cause of the irritation. In the majority of cases the underlying trouble is some obstruction of genital drainage by which the normal secretions are stagnated and chemically changed. Imperfect genital drainage creates a cancer danger not only to the vulva but to parts higher up in the tract, especially the endometrial canal. In all such cases proper surgical measures for establishing drain-

25. Reclus, P.: Leucoplasie et cancroide des muqueuses buccale et vaginale, Gaz. d. hôp., 1888, p. 685.
26. Butlin: Leukoma or Leukoplakia of the Vulva and Cancer, Brit. M. J., July 13, 1901.
27. Perrin: Contribution à l'étude de la leucoplasie vulvoanale, Ann. de dermat. et syph., 1901, p. 26.

age should be adopted without hesitation. In other cases the irritation may be from an external source, such as parasitic infections, condylomas, furunculosis or chemical irritants. Sexual abuse is probably a more common cause than is realized, and if this can be verified the best way to handle the case is deliberately to frighten the patient with the possibility of cancer. Palliative measures for the pruritus should consist of nonirritating emollients, such as hydrous wool fat, ointment of rose water containing eucalyptus and thymol, or lotions of glycerin and tragacanth. We have seen early cases of leukoplakia of the meal-dust type clear up quickly with the use of hydrous wool fat alone. Drastic salves, cocaine, irradiation and electricity should be avoided.

When the case is one of essential kraurosis, that is to say, when permanent skin changes of a leukoplakic nature are present, temporizing with palliatives is futile, since the condition is imperatively surgical. Operation consists in excising the kraurotic areas by a complete or partial vulvectomy as the condition requires. At the same time such plastic operations as are necessary to insure competent genital drainage should be carried out; e. g., enlargement of the vaginal introitus, dissection or release of vaginal adhesions and scars, excision of an obstructing hymen or an atresing vaginal membrane, and dilation of a stenosed cervix.

The surgical treatment of kraurosis, which not only cures or relieves the symptoms but prevents a later cancer, dates back to the time when the disease was first recognized. Conspicuous among the advocates of this method of treatment were A. Martin,[28] Orthmann,[29] Perrin,[27] and Veit.[11]

The advent of radium and the x-rays has given the operative treatment something of a setback in recent years, and one often sees irradiation recommended. We have seen evil results from this form of treatment and do not hesitate emphatically to condemn it. It is on the face of it illogical, for irradiation creates in the tissues a sclerotic retraction not unlike that of kraurosis.

SUMMARY

1. An extensive review of the literature on kraurosis and leukoplakia indicates the difficulties arising from the conflicting terminology.

2. A more uniform use of the nomenclature is urged, the retention of the word kraurosis in its original sense being recommended.

3. The clinical and histologic evidence here presented shows that kraurosis and leukoplakia used in the classic sense are phases of an identical process.

4. Historical, clinical and histologic evidence further shows the intimate relationship of kraurosis and leukoplakia to cancer.

5. The treatment of kraurosis is essentially surgical.

198 Commonwealth Avenue.

28. Martin, A.: Kraurosis vulvae, Zentralbl. f. Gynäk., 1894, p. 310.
29. Orthmann, G. D.: Ueber "Kraurosis Vulvae," Ztschr. f. Geburtsh. u. Gynäk. **19:** 283, 1890.

IS BISMUTH ABSORBED?

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My purpose in this paper is to invite attention again to the question of the absorption of various bismuth salts when given intramuscularly in the treatment of syphilis. Cole and his co-workers[1] reported their observations on metallic bismuth, bismuth oleate, bismuth and oxybenzoic acid, bismuth salicylate and potassium bismuth tartrate. The roentgenograms made from patients treated with intramuscular (buttocks) injections of bismuth subsalicylate, potassium bismuth tartrate, bismuth sodium tartrate and one unknown salt are here presented.

REPORT OF CASES

CASE 1.—G. J. W. was given 0.13 Gm. of bismuth subsalicylate in oil, intramuscularly, in opposite sides on May 6, 9, 18, 25 and 31, 1925; June 5, 10, 17, 23 and 28; July 3, 8, 13, 18 and 23; August 3 and August 10, and September 10, 15, 20 and 28, making a total of twenty-seven injections. Four more injections were given the patient on April 15 and April 23, 1926, and on May 1 and May 6.

Fig. 1 (case 1).—Unabsorbed bismuth eighty-five days after injections.

Fig. 2 (case 1).—Unabsorbed bismuth, 347 days after injections.

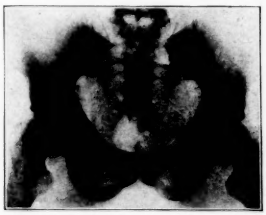

Fig. 3 (case 2).—Unabsorbed bismuth after 204 days.

A roentgenogram (fig. 1) taken July 30, 1926, eighty-five days after the last injection, shows the bismuth unabsorbed. Another taken April 18, 1927, 347 days after the last injection, shows the bismuth still present (fig. 2).

The patient was extremely active and athletic, and played golf almost daily.

CASE 2.—J. B. B. was given 0.2 Gm. of potassium bismuth tartrate in oily suspension. Serial roentgenograms were made from May 26, 1926, after three intramuscular injections of potassium bismuth tartrate had been administered.

Irregular intramuscular injections were given for seventeen full doses followed by six one-half doses and two three-fourths doses. The last intramuscular injection was given, Aug. 24, 1927. This was followed by a rest period, and on Dec. 23, 1927, and Jan. 11, 1928, the patient received two more full doses.

A roentgenogram (fig. 3), made Aug. 3, 1928, 204 days after the last injection, shows the bismuth unabsorbed.

CASE 3.—H., a man, was referred for continuance of treatment for syphilis. Blueness of the gums was present after ten intramuscular injections of an unknown bismuth compound. The eleventh injection was given, April 2, 1926. Marked blue gums were present, April 9.

1. Cole, H. N.; Farmer, H. L., and Miskajian, Hagope: Intramuscular Absorption of Some Insoluble Bismuth Compounds as Revealed by Roentgen Ray, Arch. Dermat. & Syph. **13:** 219 (Feb.) 1926.

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Serial roentgenograms were made from May 3, 1926, to June 20, 1927.

A roentgenogram taken June 20, 1927, 435 days after the last injection, shows that the bismuth was not completely absorbed (fig. 4).

CASE 4.—E. K. received ten intramuscular injections of bismuth sodium tartrate, five in each buttock, from Aug. 17, 1928, to September 21.

A roentgenogram (fig. 5) made October 12 shows complete absorption.

Fig. 4 (case 3).—Bismuth not entirely absorbed after 435 days.

Fig. 5 (case 4).—Complete absorption of bismuth.

COMMENT

No attempt is made to evaluate the various bismuth preparations from the clinical standpoint. However, there is no question, in my experience, that bismuth favorably influences the blood Wassermann reaction in some patients.

There is marked individual idiosyncrasy to the metal, as evidenced by the "blue gums."

REPLACEMENT OF THUMB NAIL

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A boy, aged 16 years, suffered an injury two years before I saw him which resulted in the loss of the nail from the left thumb. In the interval there had been ineffective attempts at restoration. At the time he was examined, there was no longer any nail growth; at about the level of the lunula there was a disintegrating mass, while toward the point of the thumb the nail bed had given place to cicatrized tissues, warped and folded in leaves. There was considerable pain.

It was evident, especially in view of the failure of previous interventions, that the problem was one of replacement—of introducing a nail that would grow. From this consideration two questions arose: Could nail substance transferred to an area in which growth had ceased be expected to grow? If so, from what area should it be taken, and what would be the subsequent history in the area to be denuded?

On reflection as to the nature of the nail substance and as to the process of its production, it was recognized as being as truly epithelial as the epidermis itself, and no one who has had experience with reconstructive surgery can fail to have been made aware of the complete dependability of the epidermal graft. That graft thrives in all conceivable situations. It will "take" on any base, whether it is muscle, connective tissue, fat, fascia, sinew, cartilage or periosteum. The reason for this supreme adaptability is that, being devoid of vessels, and being nourished by the lymph that is present in any base, the cells are equipped for practically immediate resumption of life and of the process of growth. In the case of the whole thickness free graft, severance of the vessels and nerves, while it does not destroy the life of the cells, does leave them moribund, hibernating, so to say, while awaiting the return of the life-giving fluids, which can come only after days spent in awaiting the infiltration of new arterioles and the formation of the new venules and lymphatic channels, all of which precede renewal of nerve sensitivity. With the epidermal graft there is no such delay. Thin as the shaving is, and when properly cut it is so thin as to be translucent, it nevertheless incorporates multifarious islands of cells from the stratum germinativum and the adjoining stratum spinosum, which demand nothing more, for life and growth, than pressure contact with a source of lymph supply, present in practically all tissues in amounts freely available for the sustenance of the transplanted cells. It is true that at first glance there is little to suggest a likeness between this graft, the thinnest in the whole arsenal of reconstructive surgery, and the thick and rigid body of the nail. But if the same principle dominates, similar results can surely be predicated.

What, then, is the nail? It is the product of one of three conditions in which reproductive strata of the epithelium form diverticula invading the corium. In one case, after a penetration that is relatively deep, there is evolved the sweat gland, whose function is excretory, through a duct in which the epithelial energy continues to dominate. In a second case there is the production of the sebaceous gland, and, contiguous to it, establishment of the walls of the hair follicle, the development of the hair root through changes in the cells of the surrounding epithelial walls, and the passing of the hair, so evolved, through its epithelial lumen, past the level of the skin. The nail takes its origin in the same kind of intrusion, and is formed between walls of epithelium at the nail root. The essential difference is one

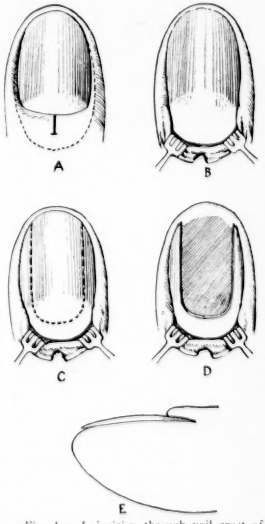

Fig. 1.—*A*, incision through nail crest of donor thumb; *B*, retraction of nail crest, exposing nail root; *C*, delineation of graft; *D*, graft excised; *E*, graft transplanted to prepared bed of injured thumb.

of form, for whereas the issuing hair is free on all sides, the issuing nail spreads over a bed of tissue, the hornified layer being exposed on one surface only; secondly, although the outer surface of the nail soon passes beyond the influence of the germinative epithelium, on the undersurface growth continues, it is generally believed, until the arc of the lunula, and even

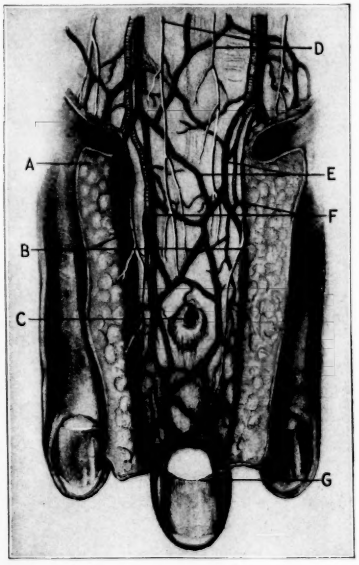

Fig. 2.—Anatomic (gross) exposition of the nail (after Testut): *A*, skin flap; *B*, branches of median nerve; *C*, bursa; *D*, dorsal collateral branches of cubital and radial nerves; *E*, dorsal collateral veins (interosseal); *F*, dorsal collateral arteries; *G*, nail with root.

beyond that point there may be remainders of strata below the stratum lucidum, the normal floor of the horny layers.

It appeared reasonable to suppose, therefore, and was indeed histologically inevitable, that if a part of the living, growing nail substance was carried into the groove in which the former nail had ceased to grow, it would bear with it, on its undersurface, the elements of life and growth, and that a new nail would be pushed forward over the nail bed and between the nail walls. Also it was clear that, if living tissue was to be taken from another nail, it must not be in such quantity as to preclude the growth of the nail on the digit member from which the graft was taken. Enough must be left on the donor digit to assure the growth of the new nail. And enough must be taken to justify the expectation that this unusual form of epidermal graft would follow the course that has long been familiar to those experienced in the employment of its almost impalpable counterpart. The deduction was that half, or possibly a little more than half, of the nail within the arc of the lunula should be taken for the graft, to afford a reasonable assurance of growth, the remainder, from its position, assuring restoration in the donor area.

Moreover, account must be taken of the direction of the growth. For this it would be sufficient that the excision should be extended through the whole length of the nail, and that the graft should be placed in its right position on the nail bed between the nail walls. On the donor side it appeared to be sufficient to leave, for this guidance, margins of nail substance within each of the nail walls.

If this reasoning was sound, and gave the right answer to the first question, it also indicated the answer to the second. The nail of the thumb of the other hand, to which the new one would be expected to conform, must be the donor, rather than the nail of the great toe, the only other practicable resource.

These considerations are set forth here as indicating that the replacement was not an empiric experiment, an affair of proof by trial and error with risk of a second disfigurement, but one suggested by the accumulating data provided by continuous observation in a great clinic devoted to reconstructive surgery. We knew that hair follicles had been transplanted singly for cilia replacement; that loss on one eyelid is best replaced by a graft from the upper eyelid on the same or the opposite side, and that the epidermal graft rarely fails. The replacement of one thumb nail by a graft from the other thumb seemed therefore to be beyond prospect of misadventure, and the procedure was carried out in that belief, which was completely justified by the result. There was nevertheless a moment of dramatic interest when, on removal of the bandages, inspection disclosed that healthy growth was proceeding on both nails. The subsequent history is revealed by the end-results on both thumbs, as shown in figures 4, 5 and 6.

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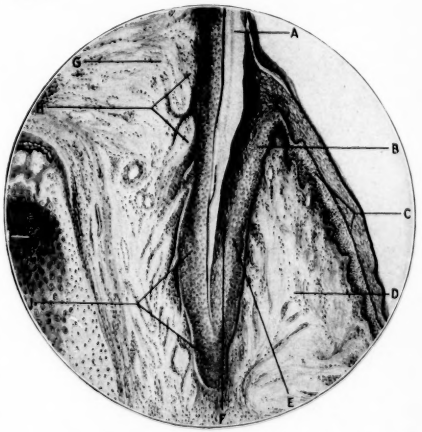

Fig. 3.—Longitudinal section through nail and nail folds (after Szymonowicz): *A*, nail; *B*, epidermis of nail fold; *C*, epidermis surrounding nail bed; *D*, corium; *E*, stratum malpighii; *F*, stratum corneum; *G*, corium; *H*, nail bed; *I*, cartilage of phalanx; *J*, matrix of nail.

Thus there was once more triumphantly vindicated the dependability of grafts whose dependence is on the nourishment of living epithelial cells by the lymph fluid present in the tissues of the base, the exceptional feature in this case being the relatively exaggerated thickness of the nail substance as compared with the horny layer of the skin epidermis.

OPERATIVE PROCEDURE

Under local anesthesia the bed was prepared for reception of the graft. At about the site of the lunula there was a hard, dirty mass, which in microscopic section proved to be firm but degenerated nail substance. There was no evidence of normal histologic nail substance being present. In front of this mass there was entire absence of nail constituents, the nail bed consisting of irregularly cicatrized tissues. All surface tissues were pared down to the periosteum, which

Fig. 4.—Condition of thumb of left hand.

Fig. 5.—End-result in thumb of left hand.

was carefully respected. The preparation of the base was carried back, under the crest, to the farthest limits, the groove of the nail root. When these excisions were made, accurate definition was given to the nail walls, in which there had been some deviation due to the cicatricial condition. Pressure on the new base with hot Ringer's solution, to stop the ooze, was applied by the assistant.

On the thumb of the other hand, the nail crest was divided by incision and the sides were retracted so as to expose the nail to its visible end. Incisions were then made through the nail substance, as shown in figure 1, designating the form and extent of the graft, and leaving substantial margins on both sides as well as at the root. The graft so outlined was excised to the full thickness of the nail and down to the tops of the papillae, and transferred at once to the bed prepared on the injured thumb. The graft was pressed well back into the pocket of the nail root.

BANDAGING

With the thumb resting on a splint, the graft was covered by a layer of rubber tissue in which openings had been made to allow for the exudation of liquids; then, to give stability, a layer of cotton wool saturated with sterile boric acid and tightly wrung was applied, with finally a wrapping of gauze, wound under tension sufficient to immobilize the thumb, and, with the aid of the splint, to apply the requisite pressure. The hand and arm were kept immobile, in an upward position, resting on a pillow, as a precaution against edema. The wound on the thumb on the donor side was dressed in the same way but without the pressure.

A somewhat delicate problem arises in connection with the application of pressure over the grafted nail. The firmness and consequent immobility, which in the case of the epidermal skin graft is supplied by the mold of stent, is here present in the consistency of the nail itself. But there is the danger that too great a pressure might prevent the free passage of the lymph fluid from the base through the interstices between the cells and out again. There is no mathematical guide to the regulation of this pressure. The adjustment must be such as commends itself to the operator, in the light of his experience, and hence is a factor dominated by such intangible factors as familiarity of manipulation, touch and visual observation.

AFTER-CARE

On the second day the dressings were removed from the donor thumb. The wound area within the nail remainders was cleansed, the object being to maintain a clean and sterile surface and promote the healthy regeneration of the part. The dressings were renewed, not too heavily, every twelve hours, until the fifth day, when they were left off. Subsequent treatment was that given open wounds, under a screen canopy. To combat the tendency to excessive dryness, the part was smeared with yellow petrolatum. It was observed that, under the protection of this medium, there was a continuous epithelial expansion from beneath the nail remainders, outward over the wound surface. Such granulations as appeared were lightly touched with silver nitrate. As the new growth from the nail root pressed forward, there was a tendency to folding, and therefore thickening, on the remainders along the nail walls. Frequent shaving sufficed to obviate any bad effects. The covering of the nail bed by the new growth was much more rapid than ordinarily, presumably because of absence of opposition. Ultimately a new nail was regularly established between the nail walls. There was noted a coronal appearance at the arc of the lunula. The present indication is of a sure return to the familiar form. As to the donor nail, therefore, the expectation has been realized.

With the grafted nail, following experience with the epidermal graft, the dressings were saturated with hydrogen dioxide on the fourth day to facilitate removal. The physical appearance, ashy, with a suggestion of pink, was instantly recognizable as indicating the life of the graft. The dressings, as before, were renewed, and not changed again until the tenth day, when they were discarded. This time the gray had been largely replaced by a suffusion of pink, the whole graft was firmly adherent to its base, and there was some expansion of epithelium over the spaces between the nail and the nail walls. Every four hours these spaces were inspected, cleansed, and smeared with petrolatum; incipient encrustations were removed, and granulations were lightly touched with silver nitrate. The persistent effort was to prepare the nail bed for a perfect reception of the new nail as it advanced. There was some disintegration of the old nail substance (of the graft) as the new nail advanced. Clipping at the thumb point, to allow for the advance, was begun after three weeks, at which time the patient left the hospital. He reported for office treatments at frequent intervals. These continued during my absence from the country. On my return after three months, the appearance of the nails was as shown in figures 4, 5 and 6.

Fig. 6.—Present state of donor thumb nail; note the irregularity of the arc of the lunula.

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PYREXIA IN MALIGNANT NEPHROMA (HYPERNEPHROMA)*

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MINNEAPOLIS

That fever may occur in the course of malignant disease, and apart from any infectious complication, has long been known. Its existence in malignant nephroma [1] of the kidney has apparently been so little emphasized in the past as to justify a brief discussion of it at the present time.

Its occurrence in two cases in a series of seventeen of these tumors at the University Hospital has served to focus our attention on it, particularly since a knowledge of this relationship might have served to clarify the preoperative diagnosis in the first case. In this series of seventeen cases of malignant nephromas, fever was a prominent feature in two, or 11.7 per cent. Elevation of the temperature to above 100 F. was present in three other cases, but was associated with an obvious complication in each instance. Only four cases of mixed tumor of the kidney in infancy occurred in the group, and all of these were afebrile.

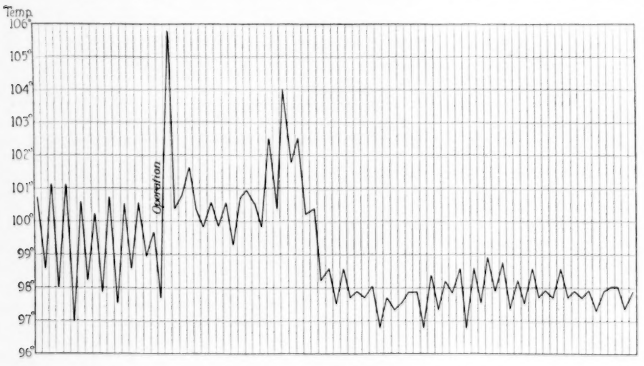

Fig. 1.—Fall in temperature following nephrectomy in a patient with malignant nephroma. After Israel (1911), chart 5.

REPORT OF CASES

CASE 1.—L. D., a married woman, aged 53, admitted to the medical service of the University Hospital in October, 1923, with a past history of no particular interest, complained of cough and dyspnea on exertion of some years' standing. Epigastric distress of an atypical character had been present for four months, and was associated at irregular intervals with nausea and vomiting. She had lost 24 pounds (11 Kg.) in six months. She complained of incontinence of urine on coughing, of long duration. Physical examination revealed an anemic condition with nutrition below the average. The temperature on admission was 100 F. Impaired resonance and bronchovesicular breathing, with an occasional fine, dry crackle, were observed at the apex of the left lung. Deep in the left flank was a mass about twice the size of a normal kidney, firm in consistency, smooth and not tender. It moved slightly with respiration. Examination of the blood revealed a hemoglobin of 50, a red blood cell count of 3,000,000 and a white blood count of 9,600, with a normal differential count. The urine was entirely normal on many occasions. The phenolsulphonphthalein output was 70 per cent in two hours. Roentgenograms of the chest revealed a minimal tuberculosis of the left apex of doubtful activity. Roentgen examination of the gastrointestinal and urinary tracts did not demonstrate any evidence of abnormality. The blood urea was normal.

Cystoscopy showed a normal bladder. Indigo carmine returned in normal time on the right side, but was delayed and appeared in poor concentration on the left. Pyelograms (fig. 4) revealed a large hydronephrosis and hydro-ureter on the left, with an early dilatation of the right kidney pelvis. The preoperative diagnosis was infected hydronephrosis, left, and early right hydronephrosis, uninfected, probably due to the presence of anomalous renal vessels.

The diagnosis of infected hydronephrosis was thought to be favored by the patient's fever (fig. 3). From the time of admission until the day of operation (a period of two months), the temperature had varied from 100 to 102 F. There were no days of freedom from fever. At operation, performed, Dec. 20, 1923, by Dr. Cameron, the left kidney was found enlarged to twice the normal size. Enlargement was due to replacement by nodules of yellow, friable tumor tissue. The peritoneum overlying the kidney had been invaded by the neoplastic process. The kidney and tumor were removed, together with the overlying peritoneum, in the usual way. In spite of transfusion and other supportive measures, the patient died, apparently of shock, about four hours after operation.

Examination of the specimen demonstrated replacement of most of the kidney by tumor tissue. There were numerous areas of necrosis and hemorrhage. Microscopic examination showed the tumor to have a connective tissue stroma containing islands of large, clear, polyhedral cells, often with a "foamy" cytoplasm. The nuclei were large and hyperchromatic. No mitoses were seen. These large cells tended to arrange themselves in the form of large but imperfect tubules. They occurred principally in the vicinity of the blood vessels. Evidence of infection was lacking.

Autopsy revealed healed tuberculosis at the left apex. The left kidney and its overlying peritoneum were missing. The stump of the left renal vein contained tumor tissue which projected into the inferior vena cava.

The pathologic diagnoses were: (1) malignant nephroma, left kidney; (2) extension into renal vein and peritoneum; (3) healed tuberculosis, left apex, and (4) compensatory hypertrophy of the right kidney, with early hydronephrosis of undetermined origin.

No metastases were found.

CASE 2.—H. J., an unmarried man, aged 55, a laborer, admitted to the surgical service of the University Hospital in June, 1927, with a negative past history, complained of a progressive loss of strength of one year's duration. Three months before admission, he had had a painless gross hematuria. This had disappeared, leaving a feeling of soreness in the right flank. Intermittent hematuria had been present ever since, and was associated with frequency of urination and with difficulty in starting the urinary stream. At examination the patient appeared well developed and well nourished, with a florid complexion. The temperature was 98.6 F. Rather superficially situated in the right flank was a smooth, firm mass, not tender, and conforming to the shape of a kidney, but about twice the

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1. The term "malignant nephroma" is used in this paper to designate that neoplasm which has been more generally known as "hypernephroma." It is not the author's purpose to enter into a discussion of the oncology of these tumors. Suffice it to say that the weight of evidence at the present time seems opposed to the view that they arise in suprarenal rests, and that the term "hypernephroma" should be abandoned as ambiguous.

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size of a normal kidney. Its lower end was freely movable. It moved but slightly with respiration. The blood studies were normal. The urine contained a trace of albumin and numerous red and white blood cells. The phenolsulphonphthalein output was 48 per cent in two hours. Roentgenograms of the urinary tract showed the shadow of a large right kidney. Cystoscopy demonstrated hypertrophy of the prostate, grade 1. The capillaries of the left side of the bladder were dilated. Bloody urine was obtained from the right ureter. A pyelogram (fig. 5) revealed a deformity of the right kidney pelvis, with some elongation of the calices.

The preoperative diagnosis was tumor of the right kidney, probably a malignant nephroma. Roentgen examination of the chest at this time did not reveal any abnormality. The temperature rose to 102 F. on July 20, and returned to normal a few days later. No particular significance was attached to this pyrexia at the time, since it followed cystoscopy.

pain in the left side of the chest. Roentgen study at this time showed an infiltration at the left base, probably metastasis. High voltage roentgen therapy was instituted. The patient left the hospital in good condition in September, 1927. He returned in January, 1928, because of pain in the dorsal region. Roentgenograms of the whole spine were normal. In the chest, the metastasis previously reported was still present. He was discharged after further irradiation, practically free from pain.

Through the courtesy of Dr. H. E. Wilmot of Litchfield, Minn., the patient's subsequent history was obtained. Dr. Wilmot stated that in September, 1928, the patient developed a cough, which was followed shortly by a flaccid paraplegia with paralysis of the sphincters. He was observed by Dr. Wilmot from then until his death, three months later. The temperature varied during this time from 96 to 104, and the urine, which had previously been normal, contained albumin and pus. Signs of fluid appeared at the base of the left lung.

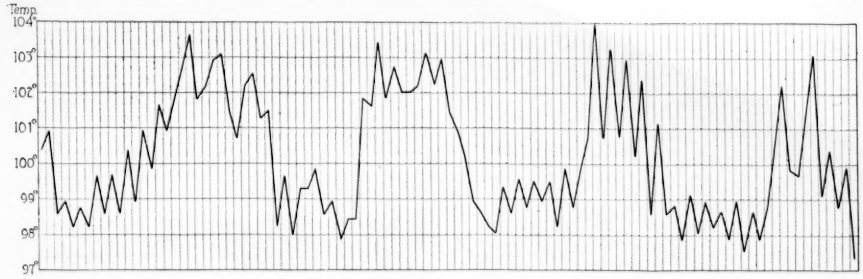

Fig. 2.—Temperature curve in a woman, aged 34, with "hypernephroma." The fever was of the intermittent type. After Israel (1911), chart 6.

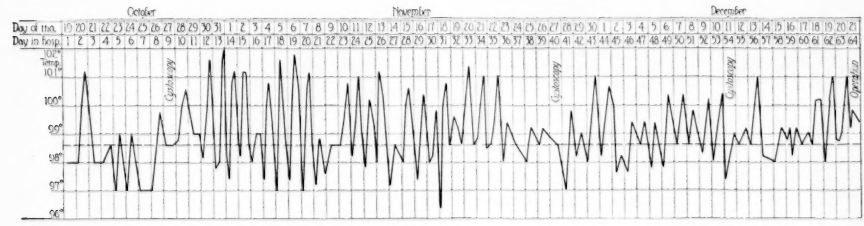

Fig. 3 (case 1).—Temperature curve: Fever was irregular and hectic in type.

Operation was performed, July 27, by Dr. Wangensteen. A large, irregular, yellow, friable tumor was found invading the lower half of the right kidney. A nephrectomy was performed.

Inspection of the kidney following removal showed the tumor confined to the lower half of the kidney, without invasion of the pelvis or renal vein. There were areas of necrosis and of hemorrhage. Microscopic examination showed a stroma of connective tissue in which there were many scattered round cells. There were cords and islands of tumor cells similar to those in case 1, and they were similarly arranged.

For four days following operation, the temperature did not rise above 100.8 F. (fig. 6). On the fifth postoperative day the temperature rose to 104 F., and for sixteen days thereafter the temperature varied between 98 and 104 F., gradually reaching normal. During this time, the urine was clear and there was no evidence of wound infection. On the tenth postoperative day, the patient complained of dull pain and soreness over the left temporoparietal region, which was tender on palpation. Roentgenograms of the skull (fig. 7) revealed areas of mottling in the left frontal and anterior parietal region, with a definite defect on the left. The appearance was highly suggestive of an early metastasis. A few days later there was

No autopsy was obtained. In this terminal fever, infection of the urinary tract was probably the important factor.

REVIEW OF THE LITERATURE

Textbooks on urology usually refer only casually to the occurrence of pyrexia in association with malignant renal neoplasms. Kelynack [2] mentioned fever as usually delayed "until secondary inflammatory processes are set up."

White and Martin [3] described the late occurrence of "an irregular fever, due probably to uremia or autointoxication."

Young [4] remarked the presence of fever in four of a series of forty-three cases, but did not comment on it.

In no textbook that has been reviewed has any particular significance been attached to the relationship between fever and nephroma, although it is apparent

2. Kelynack, T. N.: Renal Growths, New York, 1898.
3. White, J. W., and Martin, E.: Genito-Urinary Surgery and Venereal Disease, Philadelphia, J. B. Lippincott Company **1**: 846, 1898.
4. Young, H. H.: Practice of Urology, Philadelphia, W. B. Saunders Company **1**: 524, 1926.

that such a relationship exists and that at times it may be of real value in establishing a diagnosis.

The association was first emphasized by Israel[5] in 1896, in his report on a man, aged 43, who had suffered from fever of a hectic type for some months. At operation, a large right-sided nephroma was found. The pyrexia disappeared promptly after removal of the tumor. The same author[6] in 1911 stated that, of 146

Fig. 4 (case 1).—Large hydronephrosis and hydro-ureter on the left side with early dilatation of the right kidney pelvis. The diagnosis was not suspected on the basis of this film.

cases of renal and suprarenal hypernephromas in which operation was performed by him, 18.2 per cent presented fever as a symptom, and that in several instances it had been for a considerable period the only symptom noticed by the patient. He credited Stetter[7] and Ascher[8] with having made similar observations.

Israel distinguished an "initial, an intercurrent and a final fever, any one of which might be hectic, recurrent or hematuric." He made no attempt to differentiate the various varieties on an etiologic basis, except to state that the hematuric variety was observed either just before or immediately after the passage of blood in the urine. Figures 1 and 2 have been modified from Israel's original illustrations. Figure 1 depicts the fall of an irregular fever after operation; figure 2 represents the intermittent type of fever not infrequently seen in these cases.

Israel was unable to evaluate the fever from a prognostic standpoint, since several patients exhibiting pyrexia had remained well for a number of years following operation. On the other hand, he believed that at times it was associated with rapid growth or with extension of the tumor beyond the kidney capsule, or with the development of metastases. However, it had occurred in cases of his in which none of these factors were present.

As to the specific cause of the fever, Israel advanced three theories. Infection in the form of a pyelonephritis or pyelitis could be proved pathologically in a few instances only. He was inclined at first, in cases free from infection, to attribute the phenomenon to the absorption of necrobiotic material from the tumor. This, however, he regarded subsequently as unlikely, since fever occurred in cases in which necrosis could not be demonstrated on careful examination of the tumor, whereas some large necrotic growths were not associated with any elevation of the temperature. He concluded, from these considerations, that the pyrexia was due to the formation in the tumor of specific pyrogenic substances. This seems most likely, although it is doubtful whether the substance, whatever its nature, is characteristic of malignant nephroma alone. He regarded failure of the fever to subside after removal of the tumor as evidence either of incomplete operation or of metastasis. When he reviewed the subject in 1925,[9] he held substantially the same views as before. He referred to the experience of Fedoroff,[10] who had found fever in 25 per cent of his whole series of malignant renal neoplasms.

Fig. 5 (case 2).—Deformity of right kidney pelvis showing a small filling defect, on the basis of which, combined with the clinical observations, the diagnosis was made. By mistake, the lead marker "R" was placed on the left.

Israel also mentioned at this time that he had observed febrile phenomena in the mixed renal tumors of childhood. In support of this statement is the paper of Marsh,[11] who in 1887 reported the occurrence of

5. Israel, J.: Ueber einige neue Erfahrungen auf dem Gebiete der Nieren Chirurgie, Deutsche med. Wchnschr. **22**: 345, 1896.
6. Israel, J.: Ueber Fieber bei malignen Nieren und Nebennieren-Geschwülsten, Deutsche med. Wchnschr. **2**: 57, 1911.
7. Stetter: Verhandl. d. deutsch. Gesellsch. f. Chir. **16**: 37, 1887.
8. Ascher: Diss., Strasbourg, 1900, quoted by Israel.
9. Israel, J., and Israel, W.: Chirurgie der Niere und des Harnleiters, Leipzig, 1925, p. 436.
10. Fedoroff, S. P.: Ueber Feste Nieruntumoren und ihre chirurgischen Behandlung, Ztschr. f. Urol. **16**: 393, 1922.
11. Marsh, Howard: On the Association of Suppuration with Malignant Disease, St. Bartholomew's Hosp. Rep. **23**: 147, 1887.

pyrexia, reaching as high as 102 F., in a child, aged 9 years, who was suffering from renal sarcoma. Since the second paper of Israel, the occurrence of pyrexia in malignant nephroma has received but little attention.

Loughnane,[12] in 1914, stated that slight fever was the rule in these cases, although he had found pyuria only once in a series of thirty-five cases.

In 1913, Berg [13] recorded the finding of elevations of temperature in 57 per cent of his cases of the suprarenal type of tumor. Ten of his patients had fevers varying from 99 to 100 F., while in two instances a peak of 102 was noted. He attributed the fever either to hemorrhage into the tumor or to the absorption of necrobiotic material from the growth, and said that it was especially likely to occur when the tumor was large or growing rapidly. In six instances, the neoplasm had extended into the renal vein, but he was unable to correlate this with the presence of pyrexia.

Wright,[14] in a discussion of the oncological classification of hypernephroma, did not mention fever as a feature of the disease, but in the report of case 11, a man, aged 59, he said that one month after the onset of symptoms the patient noticed "fever of 102 F. in the evening."

in renal hypernephromas, often lasting a week, with rises as high as 102.5 F. He sought to explain the fever either by the absorption of "albuminoid bodies" resulting from involution of the tumor, or by infection of the pelvis following its invasion by plugs of neoplasm.

The association of fever with extrarenal malignant conditions has been the subject of comment in many instances in the past. Wunderlich,[19] in 1856, was one of the first to mention this relationship. Finlayson,[20] in 1888, reported five cases of cancer of the large bowel in which fever had been so prominent as to suggest the diagnosis of abscess. A few years later, Hammer [21] commented on a case of multiple sarcoma of the bone which had been characterized by an intermittent fever of ten months' duration.

Briggs [22] has recently reviewed the literature on this point. He called attention to the data of Freudweiler,[23] who noted the presence of fever in 24.6 per cent of 475 cases of cancer of various types. He also quoted the figures of Osler and McCrae,[24] who found elevations of temperature in 49 per cent of their 150 cases of gastric carcinoma. In his own series of 238 cases of extrarenal malignant conditions, Briggs found that

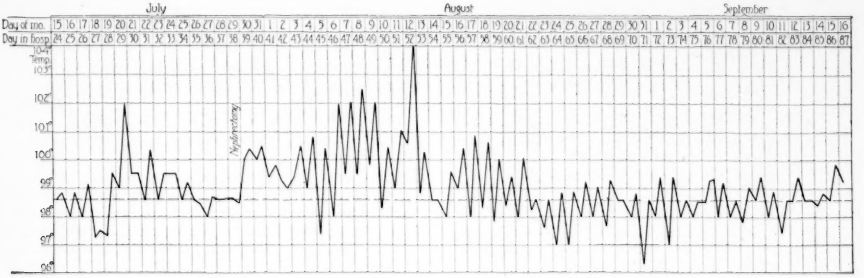

Fig. 6 (case 2).—Temperature curve. The preoperative rise was attributed to cystoscopy; the postoperative rise occurred without obvious complication. Metastases were demonstrated in the skull. In January, 1928, the temperature was normal.

Allemann and Bayer [15] observed fever in five of thirty-eight cases of solid tumors of the kidney. Twenty-seven of the whole series were classed as hypernephromas.

Castaño and Risolia [16] reported a series of six patients with nephromas, in three of whom there was fever. Two had chills. In all three, fever was the symptom that prompted the patients to seek medical attention. In each instance it subsided after nephrectomy.

Nicholson,[17] in 1927, reported a single case in which fever was an outstanding and baffling feature over a period of twenty months, obscuring the diagnosis. Only at autopsy was a malignant nephroma found. In his discussion, he referred to the paper of Voelcker,[18] who stated that fever was not infrequently observed pyrexia had been a prominent feature in about 3 per cent. He did not draw any conclusions as to its origin.

Johnson [25] has reported a patient with cancer of the breast in whom a fever ranging from 99 to 104 had been present for forty days. No explanation could be found for its occurrence. It subsided promptly after operation. There was no evidence of infection in the operative specimen, which proved to be a spheroidal cell carcinoma with metastases to the axillary lymph nodes.

The fever occurring occasionally in Hodgkin's disease has been known since its description by Pel [26] and Ebstein,[27] but its genesis has never been satisfactorily explained. The literature on the subject has been reviewed recently by Barron.[28]

12. Loughnane, F. M.: Renal Sarcoma of Infancy, Brit. J. Surg. **2:** 77, 1914.
13. Berg, A. A.: Malignant Hypernephroma of the Kidney, Surg. Gynec. Obst., **17:** 43, 1913.
14. Wright, H. W. S.: A Study of the Surgical Pathology of Hypernephromata, Brit. J. Surg. **9:** 338 (Jan.) 1922.
15. Allemann, R., and Bayer, R.: Beiträge zur Klinik der malignen Nierentumoren, Ztschr. f. urol. Chir. **14:** 129, 1923.
16. Castaño, C. A., and Risolia, A. J.: Kidney Tumors, Semana méd. **1:** 993 (May 24) 1923; abstr. J. A. M. A. **81:** 1730 (Nov. 17) 1923.
17. Nicholson, Daniel: Fever with Renal Carcinoma, Arch. Path. & Lab. Med. **3:** 393 (March) 1927.
18. Voelcker: Die Neubildungen der Niere, in Kraus and Brugsch: Spezielle Pathologie und Therapie innerer Krankheiten, Berlin **7:** 653, 1920.
19. Wunderlich: Handb. f. spez. Pathol. u. Therap. **3:** 139, 1856, quoted by Briggs (footnote 22).
20. Finlayson, James: On the Occurrence of Pyrexia, Shiverings and Pyemia in Cases of Malignant Disease, Lancet **2:** 710, 1888.
21. Hammer: Primäre sarcomatöse Ostitis mit chronischen Rückfallsfieber, Virchows Arch. f. path. Anat. **137:** 280, 1894.
22. Briggs, L. H.: The Occurrence of Fever in Malignant Disease, Am. J. M. Sc. **166:** 846 (Dec.) 1923.
23. Freudweiler, Max: Deutsches Arch. f. klin. Med. **64:** 544, 1899.
24. Osler, William; and McCrae, Thomas: Cancer of the Stomach, Philadelphia, P. Blakiston's Son & Co., 1900.
25. Johnson, R.: Some Clinical Aspects of Carcinoma of the Breast, Brit. J. Surg. **12:** 648 (April) 1925.
26. Pel: Berl. klin. Wchnschr. **24:** 644, 1887.
27. Ebstein: Berl. klin. Wchnschr. **24:** 565, 1887.
28. Barron, Moses: Some Unique Features of Hodgkin's Disease, Arch. Path. & Lab. Med. **2:** 659 (Nov.) 1926.

Stivelman [29] has called attention to the frequent occurrence of elevations of temperature in primary neoplasms of the lung. He attributed its existence either to the absorption of toxic products of tumor degeneration or to infection.

COMMENT

In our first case, fever was an outstanding feature and was regarded as favoring the presence of an infected hydronephrosis. While a knowledge of the relationship between fever and tumor might not have made the diagnosis, it would at least have compelled consideration of the possibility of nephroma before operation, and would have forestalled a complete surprise at the operating table.

In the second case, the occurrence of pyrexia following operation for nephroma suggested the possibility of metastasis in the absence of obvious origin. However, the chief diagnostic value of fever with malignant nephroma is to be found in instances of obscure fever, as in the case reported by Nicholson.

Fig. 7 (case 2).—Roentgenographic appearance of the skull made after onset of fever. The area of mottling was interpreted as showing metastasis.

To attempt to explain the origin of the pyrexia on the basis of these two cases is not feasible. In the first case, the tumor exhibited both hemorrhage and necrosis, as well as extension into the renal vein. The kidney capsule was invaded. Metastases were not demonstrated at autopsy.

In the second case, hemorrhage and necrosis were again found, but fever was not a feature of the history and during the patient's preoperative stay in the hospital had occurred only once. This one rise could be explained readily as a reaction to cystoscopy.

The postoperative rise was definitely associated with the development of metastases but subsided during the patient's stay in the hospital. It did not recur during the administration of high voltage roentgen therapy, which often causes necrosis in the areas treated.

It seems most reasonable to assume, in view of these conflicting facts, that the pyrexia was due not to necrosis or hemorrhage but rather to some abnormal substance produced by the tumor. Israel has suggested the name "pyrogenic substance" for this unknown product.[30] It may be that an understanding of its nature will come eventually from the work of investigators of tumor metabolism. Warburg [31] has recently shown that tumor cells have a metabolism of their own which differs in certain known respects from that of normal cells. This difference is demonstrated in vitro by the fact that neoplastic tissue is able, by a process of glycolysis, to convert dextrose into lactic acid in the absence of oxygen, an ability not possessed by normal tissue. He has shown that this occurs both in experimental tumors in the animal and in the spontaneous tumors of man, and has obtained evidence of its occurrence in vivo. Whether work of this type will lead to an explanation of the phenomenon of fever in malignant conditions is still, however, a matter for conjecture.

CONCLUSIONS

1. Pyrexia is not an infrequent accompaniment of malignant nephroma (the so-called hypernephroma).
2. It probably has its origin in the formation by the tumor of an abnormal product of neoplastic metabolism.
3. The presence of fever may assist in, rather than obscure, the diagnosis of malignant nephroma.
4. Malignant nephroma should be considered whenever an obscure fever is present.

29. Stivelman, B. P.: The Roentgen Ray in the Diagnosis of Primary Pulmonary Neoplasms, J. A. M. A. **91**: 1691 (Dec. 1) 1928.

30. In this connection, a case of Hodgkin's disease seen recently at the University Hospital is of interest. E. H., a woman, aged 25, had been treated with x-rays for nineteen months. Although she had had a large cervical mass when treatment was started, she did not have any palpably enlarged glands at the time of her death. At autopsy, only a few slightly enlarged axillary and retroperitoneal lymph nodes were found. On microscopic section, these had the characteristic appearance of Hodgkin's disease. Necrosis, hemorrhage and evidence of infection were absent. Yet, for the last four months of her life, she had suffered from a fever, at first intermittent, and during the last four weeks constant, ranging from 103 to 106 F.

31. Warburg, O.: J. Cancer Research **9**: 148 (March) 1925; Ueber den Stoffwechsel von Tumoren in Körper, Klin. Wchnschr. **5**: 829, 1926.

SUBACUTE COMBINED DEGENERATION OF THE SPINAL CORD IN PERNICIOUS ANEMIA

TREATMENT WITH THE LIVER DIET *

B. M. FRIED, M.D.
BOSTON

Pernicious anemia is a disease in which the hematopoietic and the central nervous systems are affected. Woltman [1] reported that, of 150 patients with primary anemia thoroughly studied at the Mayo Clinic, 80.6 per cent presented indisputable evidences of the involvement of the nervous system. Woltman's observation was corroborated by other clinicians in this country as well as in Europe (Henneberg,[2] Meulengracht [3]). It is, moreover, established that not infrequently symptoms referable to the central nervous system precede those of the hematopoietic and visceral organs, and that oftentimes they dominate the entire clinical picture. On the other hand, advanced lesions of the spinal cord may not be accompanied by clinical manifestations, except possibly for slight "acroparesthesias" that are often overlooked or unrecorded.

The dietary regimen introduced recently and applied with success in the treatment of primary anemia has aroused a deep interest in this disease. Numerous reports are to the effect that the diet leads to an out-

* From the Surgical Department of the Peter Bent Brigham Hospital.

1. Woltman, H. W.: The Nervous System in Pernicious Anemia: An Analysis of One Hundred and Fifty Cases, Collected Papers of the Mayo Clinic **10**: 933, 1919.
2. Henneberg, R.: Atypische Formen der funiculären Myelitis, Klin. Wchnschr. **3**: 920 (May 27) 1924.
3. Meulengracht, E.: Rückenmarksymptome bei perniziöser Anämie, Folia haemat. **33**: 38 (Sept.) 1926.

standing improvement of symptoms. In only a few articles, however, has the action of the Minot-Murphy diet on the central nervous system been discussed, and in these with divergent opinion. Minot and Murphy,[4] in their original article, stated that following the liver diet all patients showed "a prompt, rapid and distinct remission of the anemia, coincident with at least marked symptomatic improvement except for the pronounced disorders of the spinal cord." Bubert [5] found the diet of a distinct value in "subacute combined sclerosis." Cohen,[6] on the other hand, has noted that "more marked neurologic symptoms developed after the patient had been on a Murphy-Minot diet several months and was enjoying otherwise distinct general systemic improvement." Sturgis, Isaacs and Smith [7] found that "improvement in the signs and symptoms of combined posterior and lateral sclerosis of the spinal cord did not parallel the regeneration of blood, although slow improvement in the neurological condition has frequently followed the combined use of liver extract and physiotherapy." None of these authors had the opportunity of studying postmortem material, nor did they discuss the pathology of the spinal cord lesion.

A knowledge of the pathologic process of the spinal cord lesion in pernicious anemia is of prime importance in the evaluation of the efficacy of the drug. Only by understanding the underlying morbid process is one able to ascertain the manner in which the drug is supposed to influence the disease and also whether one might expect a cure or improvement. This I shall briefly discuss.

There is a prevalence of opinion that the disease of the spinal cord is not the result of the anemic condition but that the primary anemia and the cord lesion are caused by the same unknown factor. In the cord the lesion is confined essentially to the lateral and posterior columns of the lower cervical and upper thoracic segments. The microscopic details of the lesions are typical in that they begin around and spread from the vessels. This serves as an argument for the hematogenous transmission of the hypothetic "toxin." They consequently have in the earliest stages a focal "spotty" character. But as the disease progresses smaller foci coalesce, forming wide lacunae and giving to the cord a cribriform aspect, or a "status spongiosus," that is very typical of the disease [8] (figs. 1 and 2).

The central nervous system, like the visceral organs, is composed of blood vessels, of a parenchyma which is made up of nerve or ganglion cells and nerve fibers, and finally of an interstitium. The interstitial cells of the brain were regarded up to the last few years as being composed of two varieties of astrocytes—protoplasmic and fibrillary—and of the so-called adendritic corpuscles, or third element of Cajal. By the use of special stains Rio del Hortega has shown that (1) the adendritic corpuscles are in reality provided with very complicated processes; (2) they are two different varieties of cells, designated by him as "oligodendroglia," which, analogous to astrocytes, are of ectodermal origin, and as "microglia," which are of mesodermal origin. Today, then, one distinguishes four types of interstitial cells in the central nervous system: (1) protoplasmic neuroglia; (2) fibrillary neuroglia; (3) microglia, and (4) oligodendroglia.

The injury that each individual structure of the cord suffers under the influence of the hypothetic toxin of pernicious anemia may be considered separately.

THE PATHOLOGIC CHANGES IN THE CORD

1. *The Blood Vessels.*—As already stated, the disease has a tendency to begin around and spread from the vessels. These structures show changes evidenced by thickening and hyalinization of their walls and also by some periarterial changes. The vascular lumen is narrowed, being occluded sometimes by thrombi.

2. *The Parenchyma.*—The pathologic changes here are confined essentially to the white substance, where the nerve cells and the axis cylinders are gravely affected. The exact nature of the lesion is as yet undetermined. According to Hassin,[9] Globus and Straus,[10] and Henneberg,[2] the lesion consists essentially of a primary degeneration of the nerve fibers, which begins with a swelling and decay of the myelin sheath.

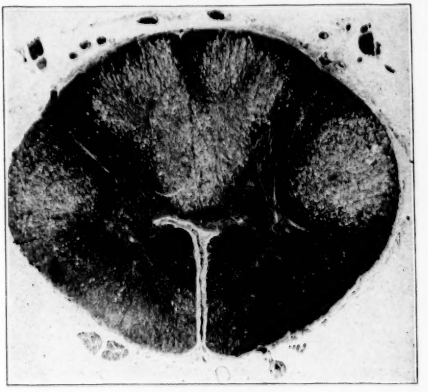

Fig. 1.—Subacute combined degeneration of the cord. A section of the lower part of the cervical segment of the cord. The posterior and lateral columns show a "status spongiosus" characteristic of the disease. The presence of lacunae in other parts of the cord must also be noticed. Methylene blue (methylthionine chloride-U. S. P.) and eosin were used; × 10. The patient, a woman, aged 60, showed symptoms of pernicious anemia of two years' duration. The time of the onset of neurologic symptoms could not be ascertained. For the last two months she had been unable to walk and also had had difficulty in handling objects. She had been irregularly on a liver diet for the past two months. At the hospital she was given daily 100 cc. of liver extract. She died fourteen days after admission to the hospital.

The process of destruction of the axis cylinders is much slower, and normal axon cylinders can often be found within swollen myelin sheaths. Shimazono,[11] Wohlwill [12] and Weimann,[13] on the other hand, have a different conception of the process. They believe that the lesion is primarily confined to the axis cylinders, affecting only secondarily the myelin sheaths. This

4. Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A. **87:** 470 (Aug. 14) 1926.

5. Bubert, H. M.: Subacute Combined Sclerosis: Report of a Case Associated with Pernicious Anemia, Improved by Murphy-Minot Diet, J. A. M. A. **90:** 903 (March 24) 1928.

6. Cohen, A. E.: Subacute Combined Sclerosis, Progressive During Remission of Pernicious Anemia, J. A. M. A. **90:** 1787 (June 2) 1928.

7. Sturgis, C. C.; Isaacs, Raphael; and Smith, Millard: The Treatment of Pernicious Anemia with a Liver Extract, Ann. Int. Med. **1:** 977 (June) 1928.

8. Fried, B. M.: Leukemia and the Central Nervous System, Arch. Path. **2:** 23 (July) 1926.

9. Hassin, G. B.: Histopathological Findings in Two Cases of Subacute (Combined) Cord Degeneration, M. Record **91:** 885 (May 26) 1917.

10. Globus, J. H., and Straus, I.: Progressive Funicular Myelopathy (Subacute Combined Degeneration), Tr. Am. Neurol. Assn., Ninety-Eighth Annual Meeting, 1922, p. 107.

11. Shimazono, I.: Ueber das Verhalten des zentralen und peripherischen Nervensubstanz bei verscheidenen Vergiftungen und Ernährungstörungen, Arch. f. Psychiat. **53:** 972, 1913-1914.

12. Wohlwill, F.: Zum Kapitel der pathologisch-anatomischen Veränderungen des Gehirns und Rückenmarks bei Perniziösen Anämie und verwandten Affectionen, Deutsche Ztschr. f. Nervenh. **68-69:** 438, 1921.

13. Weimann, W.: Grosshirn veränderungen bei Anämie, Ztschr. f. Neurol. u. Psychiat. **92:** 433, 1924.

opinion, then, would indicate that the "noxious agent" of pernicious anemia has a particular affinity for the axis cylinder. However this may be, it is firmly established that both elements, the myelin sheaths and the nerve fibers, degenerate. These elements of the cord show changes that vary greatly in intensity, depending on the gravity of the disease in general and also on the particular period in which it was "caught." As a rule one finds irregular swelling, fenestration, fatty infiltration and destruction of the axis cylinders. Because of this decay the cord substance has a typical honeycombed appearance, the "status spongiosus" referred to.

The destruction of the nerve fibers (axis cylinders) carries with it degeneration and death of ganglion (nerve) cells.

3. *The Interstitial Tissue.*—Whenever the nerve fibers and nerve cells are affected by a morbid process, there follows a change of the neuroglia cells.

The rôle of the oligodendroglia in the physiopathology of the brain is not yet clearly understood. An

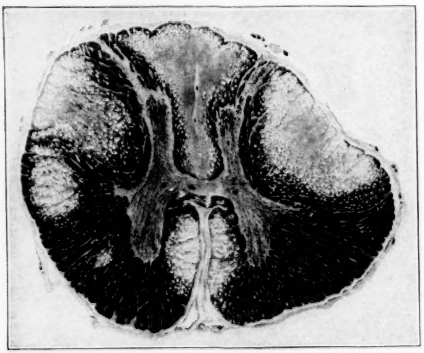

Fig. 2.—Subacute combined degeneration of the cord: A section of the cervical segment of the cord. The anterior columns show a typical "status spongiosus"; the lateral show sclerosis at an early stage, while those of the posterior are practically entirely sclerosed. (Spielmeyer.)

interesting study on the subject was recently reported by Penfield and Cone.[14]

The microglia, as already stated, are in reality not glial, i. e., nerve elements, but are believed to be mesodermal cells. Their rôle in the brain is similar to that of the same cells in the visceral organs, where they are identified as large mononuclear phagocytes or macrophages. In the brain itself they have been described as "scavenger cells," and by German writers as 'Stäbchenzellen," "Gitterzellen." Their rôle is actually manysided, being essentially of a defensive and metabolic character (phagocytosis; removal of degenerated neuroglia, formation of antibodies).

The protoplasmic and fibrous (or fibrillary) neuroglial cells play a double rôle in the process: 1. They are believed to take up the products of disintegration. 2. They proliferate, forming nests of gliosis which are nothing more than fibrosis or scar formation. These cells, too, show regressive changes, such as disintegration of the cytoplasm, swelling of the nucleus, fragmentation or breaking up of the neuroglial processes (clasmatodendrosis) and progressive changes, such as increase in the size of the cytoplasm.

Indeed, the pathologic process, like the clinical picture, passes through a series of nuances from barely demonstrable degenerative changes to a complete degeneration of nerve cells and axon cylinders followed by a gliosis. Advanced sclerotic changes, however, are seen infrequently, possibly because of the fact that the process of "organization" in this disease is extremely slow. The picture is essentially that of a progressive degeneration of certain columns of the cord and not of inflammation. As such it ought, therefore, to be defined as a subacute (progressive) combined degeneration of the lateral and posterior columns of the cord, or "funicular myelosis" (Henneberg[2]), and not as a subacute combined sclerosis. The sclerosis, therefore, being a final result of the process, cannot be in an acute, subacute or a chronic state.

THE ACTION OF THE LIVER DIET

Medicaments introduced into the body for curative purposes act in different ways. In the first place they may destroy the germ or neutralize the toxin circulating in the blood or present in the tissues. In many instances, the drug probably acts on the tissues themselves, increasing their natural forces to resist or to annihilate the disease. Often, moreover, both processes may take part in the cure of a disease.

Since the pathogenesis of pernicious anemia is unknown, the intimate mechanism of the action of the liver diet on the disease cannot be ascertained.

The favorable influence of the Minot-Murphy dietary regimen on the hematopoietic organs has been reported by many authors. In the cord, as already stated, the primary and essential lesion is confined to the nerve fibers and nerve cells, which undergo destruction. This in its turn is followed by changes in the neuroglial cells and in the blood vessels. Whereas in visceral organs degenerative cellular changes are often followed by a *restitutio ad integrum*, analogous processes of regeneration of nerve cells or nerve fibers in the central nervous system have never been observed. These structures, therefore, having been destroyed are not replaced by similar units but by the proliferated glia cells, which finally leads to a picture of gliosis or scar formation. The medicament, then, by neutralizing the hypothetic "toxin" or by increasing the body resistance toward the noxious agent, or possibly by providing the organism with a lacking substance necessary for its proper metabolism, would probably act as an accelerating agent, leading to a more prompt removal of the degenerated nervous products and their more rapid replacement by scar tissue. If one is to suppose, therefore, that the diet influences the central nervous system, at most it can probably arrest the progressive process with the possible formation of multiple foci of sclerosis, the extent of which would depend on the stage and also on the gravity of the disease. It would appear then, that, in view of the serious and apparently permanent nature of the spinal cord lesion, one cannot expect great improvement in the nervous symptoms even though the anemia has disappeared, and it is remarkable that any functional improvement at all should occur.

One outstanding point dominates the new therapeutic procedure; namely, the patient remains well as long as the liver diet is maintained. The diet, therefore, does not cure the disease but leads to a protracted remission (which, indeed, does not make its use less valuable).

14. Penfield, Wilder; and Cone, William: Acute Swelling of Oligodendroglia, Arch. Neurol. & Psychiat. **16**: 131 (Aug.) 1926.

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In the "preliver" period it was firmly established that during "natural" remissions of the anemia the lesion of the central nervous system remained as a rule active and progressive. It is important, then, to know whether a similar "dissociation" will likewise occur with the use of the recently introduced liver diet.

SUMMARY

The serious character of the lesion of the spinal cord in pernicious anemia and the peculiarities of tissue repair in the central nervous system render impossible a cure in the spinal cord symptoms under the influence of the liver diet. In view of the nature of the lesion, likewise, one may not expect great improvement in the nervous symptoms even though the anemia has disappeared, and it is remarkable that any functional improvement at all should occur.

Clinical Notes, Suggestions and New Instruments

THE INTRAVENOUS USE OF EPINEPHRINE IN CARDIOVASCULAR COLLAPSE *

HERMAN E. PEARSE, JR., M.D., ROCHESTER, N. Y.

A patient with profound cardiovascular collapse is an alarming sight, but it is even more disturbing to see a conscious person slip rapidly into unconsciousness and become cold and pulseless, despite all the ordinary methods of stimulation, and to know that the condition results from a procedure for which one is responsible, as in the case of administering an anesthetic.

It has been observed on two occasions that, following the injection of procaine epidurally for caudal anesthesia in very debilitated subjects, there resulted severe vascular collapse which was relieved by the administration of epinephrine intravenously. In these two cases the outlook appeared so poor

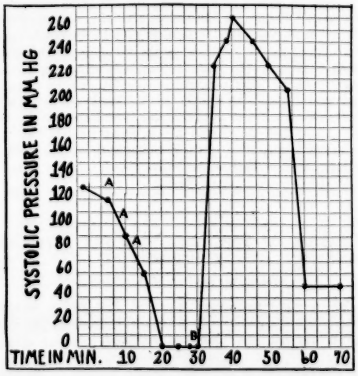


Chart 1 (case 1).—Systolic blood pressure after subcutaneous injection of epinephrine, 0.3 cc. (*A, A, A*) and after intravenous injection (*B*).

and the recovery was so dramatic that it seemed worth while to record them as examples of a method of resuscitation which would rarely be necessary but which is of value if indicated.

REPORT OF CASES

CASE 1.—L. Z., a white man, aged 73, was admitted to the Brady Urological Institute of the Johns Hopkins Hospital, March 2, 1926, because of nocturia, frequency of urination, dysuria, hesitancy and, for the past forty-eight hours, inability to void urine. He appeared senile, debilitated and drowsy. He had carious teeth, an emphysematous chest, arteriosclerosis and hypertension, the blood pressure being 170 systolic and 90 diastolic; there was distention of the bladder and a hypertrophied prostate. The blood urea was 0.7 Gm. per hundred cubic centimeters.

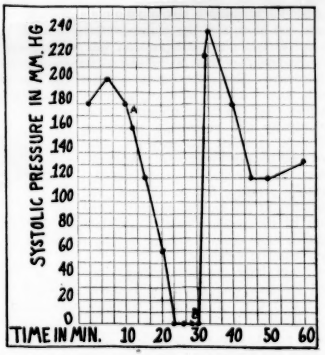


Chart 2 (case 2).—Systolic blood pressure after subcutaneous administration of epinephrine, 1 cc. (*A*) and after intravenous injection of 0.24 cc. (*B*).

A diagnosis was made of benign prostatic hypertrophy and arteriosclerosis with hypertension.

The bladder was decompressed and constant drainage was instituted. Because of the poor condition the patient was given a long preparation for prostatectomy and, on April 21, was taken to the operating room and given caudal anesthesia. Twenty cubic centimeters of 3 per cent procaine was injected epidurally by Dr. W. W. Scott, and the patient's blood pressure fell from its original level of 130 to 0.

Prior to the injection the patient was conscious and responsive, while shortly after, coincidence with the fall in blood pressure, he became unconscious, with cold, clammy skin, shallow irregular respiration, imperceptible peripheral pulses and relaxed sphincters. During the period of the fall in blood pressure, three doses of 5 minims (0.3 cc.) each of epinephrine were given subcutaneously, 5 grains (0.32 Gm.) of caffeine sodiobenzoate was given subcutaneously and the head was lowered, but there was no appreciable effect. It appeared that the patient was about to die and it was equally obvious that the stimulants given subcutaneously were not absorbed. Consequently 5 minims of epinephrine was given intravenously and there followed an immediate rise in blood pressure, which reached its climax at 270 mm. systolic. This was so rapid that a rise of 20 mm. was found with each successive reading. The patient became conscious and responded to questions, the systolic pressure fell rapidly, and he was given 500 cc. of 5 per cent dextrose intravenously and returned to the ward. No ill effects were noted from the very low or excessively high blood pressure.

Two weeks later a perineal prostatectomy was done under light ether anesthesia by Dr. W. W. Scott and the patient made an uneventful recovery, leaving the hospital much improved.[1]

CASE 2.—S. M. H., a white man, aged 69, entered the Strong Memorial Hospital with a diagnosis of carcinoma of the prostate and symptoms of frequency, urgency, hesitancy, dysuria and diminution in the caliber of the urinary stream.

The patient was emaciated and feeble. He was deaf and had carious teeth, cardiac hypertrophy, arteriosclerosis and hypertension, with a blood pressure of 180 systolic and 100 diastolic. The prostate was not enlarged but was nodular and stony hard.

The patient was put on constant drainage and because he was quite feeble and apprehensive it was decided to do the cystos-

* From the Department of Surgery of the University of Rochester School of Medicine and Dentistry.

1. I am indebted to Dr. H. H. Young for the privilege of presenting this case.

copy under caudal anesthesia. The injection of 20 cc. of 3 per cent procaine epidurally was uneventful. The plunger was pulled back before and three times during the injection and no blood was seen. The patient was mentally alert at the completion of the administration of the procaine, but shortly afterward the blood pressure began to fall and he became unconscious. The patient became pale, cold and clammy; the respirations were very shallow, being nearly imperceptible; the eyes were fixed and the peripheral pulses were imperceptible; the apex beat was not hard, and the blood pressure was 0. The head was lowered, splanchnic compression was applied and 1 cc. of epinephrine and 5 grains of caffeine sodiobenzoate were given subcutaneously. Remembering my experience in case 1, I decided to give 4 minims of epinephrine intravenously. As soon as this was done the blood pressure began to rise rapidly and reached a maximum of 240 mm. systolic; the patient's color returned; he became conscious, complained of nausea and vomited a small amount. The systolic pressure fell to 120 mm. and was sustained at 135 mm. of mercury. The condition of the patient was so satisfactory that cystoscopic examination was done, resulting in the discovery of a large solitary, prostatic calculus.

Three days later another epidural injection of 20 cc. of 3 per cent procaine was given for removal of the calculus, but this time 0.05 Gm. of ephedrine sulphate was given prior to injection, followed in thirty minutes by 0.025 Gm. of the drug. The blood pressure was sustained at 120 systolic and 80 diastolic during the procedure; the patient made a good recovery and was discharged greatly improved.

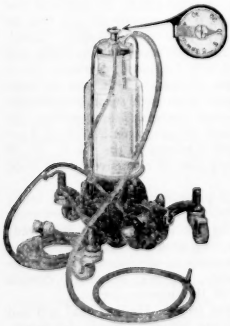
COMMENT

Much has been written on the injection of epinephrine directly into the heart but little has been said of its intravenous use. If circulatory failure prevents absorption from the subcutaneous tissues and if the heart continues to beat, the intravenous route is the simplest method of administration. It must be remembered that a much smaller dose is effective intravenously than is necessary subcutaneously and that about 5 minims is the maximum dose that should be given at one time.

A SUCTION PUMP FOR POSTOPERATIVE DRAINAGE

E. I. MCKESSON, M.D., TOLEDO, OHIO

The apparatus here illustrated is designed to evacuate pus, urine, bile or other fluids by suction after operations. It is provided with an extremely quiet running pump so that it may not disturb the sleep of a patient while maintaining an adequate vacuum to procure efficient drainage for days at a time. A valve permits adjustment of the amount of suction desired, while lubrication is maintained from oil reservoirs.



Suction pump for postoperative drainage.

In addition to evacuating pus from the pleural cavity, the pump also maintains a gentle suction to prevent collapse of the lung, restoring respiratory function to the affected side and relieving much of the pain and cough in these cases. The quantity of drainage may be seen in the bottle, since none soils the dressings.

The apparatus is also useful in removing urine from the bladder after prostatectomy and in keeping the dressings dry and the patient more comfortable. In peritonitis, in gallbladder drainage or in any condition in which better than ordinary drainage is desired, it may be employed in connection with the ordinary drainage tubes or wicks by the addition of a central tube or catheter attached to the pump.

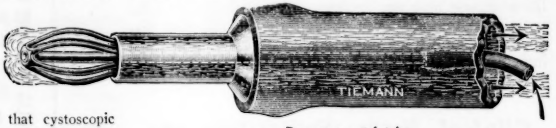
The suction pump operates on the ordinary lighting circuit.

2233 Ashland Avenue.

A NEW RECURRENT RECTAL TUBE

ANTHONY BASSLER, M.D., NEW YORK

In some instances of chronic proctitis, in ulcerative colitis (which begins as an upper rectal infection) and occasionally in malignant disease of the upper rectum and sigmoid, irrigations of the rectum may be beneficial. All types of tubes and tips heretofore devised and used for this purpose have failed to meet the requirements necessary. The essentials are a tip easy of introduction, which will sustain itself in position, by which the inflow or the outflow of fluid does not permit of accumulation in the rectum, which antiperistalsis can mount up into the colon, and which is easily sterilized. With all tubes and tips of the past, the inflow tube has been much too large and the outflow ability far too small. They have irrigated the rectal mucosa only in part, the result of their use being essentially that of an enema. The soft recurrent tubes must be held in, especially when treatments in the sitting position are employed. This is not only a nuisance but far from cleanly. More than that, such tubes and those made of hard rubber cannot be boiled.



Recurrent rectal tube.

With the tube as illustrated introduced through the anus, the tip is comfortably retained even in the sitting position on the toilet—the ideal position for cleansing the rectum. If the irrigating bag or jar is at about the level of the patient's head, the volume of inflow is controlled by the small caliber of the inflow tube. The large fenestra of the wire end together with the large caliber of the metal tube permits of quick egress of the introduced fluid. Attached to the shoulders of the apparatus is about 5 inches (13 cm.) of thin rubber tubing of 2.5 cm. (1 inch) caliber. This prevents soiling the skin in women with full gluteal cheeks. As a rule, this tubing is not necessary, the tip being used without it. This tip has been used by me for several years and an enema result from its use has not yet been encountered. The main advantage of its use is to allow treatments by the patient at home.

21 West Seventy-Fourth Street.

LIGATION OF POPLITEAL VEIN FOR IMPENDING GANGRENE *

GÉZA DE TAKÁTS, M.D., CHICAGO

E. M., a night watchman, aged 56, had had a serious fall six years before examination, after which he developed varicose veins on the left leg. He had received injection treatment, and later a ligation of the saphenous vein was done. A year before examination he developed severe cramps in the left foot on walking. The pain was relieved by rest. When he was seen, June 12, 1928, there was no pulsation of the dorsalis pedis and posterior tibial arteries on either side. The pulsation of the left popliteal artery was questionable. There was no rubor in the dependent position.

Roentgenograms of both legs revealed sclerotic vessels. There was a diffuse osteoperiostitis of the left tibia, suggesting a syphilitic process. The blood sugar was 96 mg. per hundred cubic centimeters of blood. The Wassermann reaction was negative both in the blood and in the spinal fluid. The his-

* From the Surgical Dispensary, Northwestern University Medical School, and the Third Surgical Service, Wesley Memorial Hospital.

tamine test[1] was negative below both knees and positive, after five minutes, above the knees. The systolic blood pressure was 118 and the diastolic 82 mm. of mercury.

Diathermy and baking were given without any relief. The intermittent claudication became so severe that the patient was unable to walk more than a few steps. September 15, he presented himself with a dark blue, edematous fourth toe. He was admitted immediately to the hospital.

September 20, under local infiltration anesthesia, the left popliteal vein was exposed and cut between two ligatures. The vein was not thickened, and the intima was smooth and glistening. The artery showed moderate sclerosis but pulsated well.

From the first day following the operation, the left foot felt much warmer than the right. However, there was no change in the histamine reaction. Surface temperatures were recorded with a thermocouple at frequent intervals. The differences in temperature are shown in the accompanying table. The greatest increase in heat was noted around the ankle and it is in this region that the increase in temperature was most persistent. The fourth toe, which originally became cyanotic, remained warmer only for the first three weeks. Nevertheless, the cyanosis has not reappeared.

The patient could walk up six flights of stairs two weeks after the operation without any attack of pain. At the last examination, a little more than four months following the operation, his condition was equally good. There was no cyanosis or edema, in spite of the fact that the long saphenous vein was completely obliterated.

COMMENT

Ligature of the popliteal vein for gangrene of the lower extremity was suggested by Oppel[2] in 1913. Fourteen years later, Holman and Edwards[3] showed in the experimental animal not only that the ligation of a vein is always advisable when the artery is tied, but that if the vein is tied at a higher level than the artery, both blood pressure and blood flow are markedly increased at the distal stump of the ligated artery. McNealy[4] performed several ligations in arteriosclerosis and Buerger's disease and believed that it did not affect the ultimate outcome. Morton and Pearse[5] emphasized the temperature effect of such ligations.

Temperature Differences Between Left and Right Leg Expressed in Degrees Centigrade

Ligation of the left popliteal vein, Sept. 20, 1928.

Date	Above Knee	Below Knee	Middle Third	Ankle	Big Toe	Fourth Toe	Comment
9/18	−0.1	−0.5	−0.5	−0.3	−1.3	**−2.0**	Toe cold and blue
9/20	Operation						
9/29	+2.0	+1.4	+1.2	+1.5	+0.8	+0.8	Toes warm
10/ 1	+0.5	+0.3	+1.0	+1.5	+1.0	+0.8	Ankle particularly warm
10/ 2	+0.2	+1.6	+1.7	**+1.8**	+0.9	+0.6	Ankle particularly warm
10/ 8	+0.9	+1.3	+0.9	**+1.8**	+0.9	+0.3	Ankle particularly warm
10/14	+0.4	+1.1	+1.2	+1.6			
10/19	+0.5	+0.6	−0.2	+0.9	+0.5	**−0.3**	
10/30	+0.8	+1.0	−0.5	+0.6	−0.5	−0.7	Toes cold; no cyanosis; no pain
11/26	+0.3	+0.5	+0.5	**+0.7**	−0.3	−0.6	No pain, edema or cyanosis

The increase in venous pressure and carbon dioxide content which follows the ligature of a large vein dilates the minute vessels and favors collateral circulation. This will be only a temporary effect and explains the immediate rise in temperature. A more lasting effect is obtained by a proper balance of the inflow and outflow of the blood. In partial arterial occlusion there is a disproportion in favor of the venous back flow. The ligature of the vein increases the difficulty of venous return and thus established a better proportion between inflow and outflow.

Dean Lewis[6] pointed out that collateral circulation is much more readily established in thrombo-angiitis obliterans than in arteriosclerotic gangrene. In the present case, in which arterial occlusion is probably on an arteriosclerotic basis (although syphilis cannot be excluded), the ultimate outcome cannot be judged too favorably. However, a definite improvement in circulation, with loss of cyanosis and relief from pain, has been obtained by this simple procedure in a patient in whom an amputation above the knee, as indicated by circulatory tests, is the operation usually performed.

122 South Michigan Avenue.

1. De Takáts, Géza; Quint, H.; Tillotson, L. T., and Crittenden, P. J.: The Impairment of Circulation in the Varicose Extremity, Arch. of Surg. In press.
2. Oppel, F.: Die Wietingsche Operation und der reducierte Blutkreislauf, abstr. Centralbl. f. Chir. **40:** 1241 (Aug. 2) 1913.
3. Holman, Emile, and Edwards, Muriel: New Principle in Surgery of Large Vessels: Ligation of Vein Proximal to Site of Ligation of Artery: Experimental Study, J. A. M. A. **88:** 909-911 (March 19) 1927.
4. McNealy, R. W.: The Place of Elective Vein Ligation in Blood Vessel Surgery, Surg. Gynec. Obst. **40:** 45-48 (Jan.) 1925.
5. Morton, J. J., and Pearse, H. F.: Temperature Effect of Popliteal Vein Ligation in Thrombo-Angiitis Obliterans and Arteriosclerosis, Ann. Surg. **88:** 233-240 (Aug.) 1928.

CASE OF ARACHNOIDISM (SPIDER BITE)*

L. F. SCHMAUS, M.D., HALSTEAD, KAN.

It is now quite well established that certain spiders found in the United States are poisonous, the chief one being *Lactrodectus mactans,* commonly known as the black widow or hour-glass spider. No doubt it is thought by many to be the only venomous spider in this country; however, an occasional case is found in which other species are responsible. Whether or not the reaction is due to an individual sensitiveness on the part of the patient is, as yet, a matter of some conjecture. It does remain a fact, however, that definite reactions do occur, as is shown by the following case:

Mrs. C. S., aged 24, entered the hospital because of a spider bite on the ulnar side of the right elbow, and a rash over the entire body with the exception of the face.

She stated that while riding in an automobile, Nov. 5, 1928, she suddenly felt a sticking sensation on her right elbow. She removed her coat, ran her hand into the sleeve and withdrew a small object which dropped to the floor of the car and which, when recovered, was found to be a rather small, tan spider.

Her arm began to pain at once, the pain becoming progressively worse. On returning home an hour later, she examined her arm and found a dark red spot surrounded by an area of pallor. She slept well until 3 a. m. without a sedative, when she awakened with pain in her right arm and a generalized rash, which was most pronounced on the abdomen and back. Her arm at this time was aching and had swollen somewhat. The next day the swelling was very pronounced. Four days later the rash seemed to be fading, but the following day it was as bad as before. Before entering the hospital the patient had had a rapid pulse, but her temperature reaction was mild, never much over 100 F. She entered the hospital five days after having been bitten.

The patient was anxious and restless. The arms, legs, abdomen and chest were covered with a scarlatiniform rash with a few small pustules on the legs.

The tongue was coated and there was some flushing of the mucous membranes of the mouth. The tonsils were normal. The pulse was 100. The blood pressure was 100 systolic and 60 diastolic.

On the inner surface of the right elbow was found a small reddened area with a yellow center, resembling a small pustule. The area around the elbow was swollen and tender. The entire abrasion was not more than one-fourth inch in diameter.

The urine was normal except for a slight trace of albumin. The blood count showed hemoglobin, 88 per cent; white blood cells, 14,150; red blood cells, 5,110,000. The differential count was: polymorphoneuclears, 66 per cent; large lymphocytes, 32 per cent; mononuclears, 2 per cent. The red cells were normal in size, shape and staining. The white blood cell count on discharge was 9,750. The blood Wassermann reaction was negative.

During the patient's stay in the hospital, the pulse rate varied from 76 to 118. The temperature was never over 100, ranging most of the time from 99.4 to 99.6. The respiration was 20.

The treatment was essentially palliative, consisting of sedatives internally, and starch and sodium bicarbonate baths. A

6. Lewis, Dean: Spontaneous Gangrene of the Extremities, Arch. Surg. **15:** 613-627 (Oct.) 1927.

* From the Halstead Hospital.

solution of 0.5 per cent lead acetate was used in wet packs applied to the area of the bite.

The spider was identified by Prof. C. R. Crosby of Cornell University as a specimen of *Loxosceles refescens* Dufour, a species usually found in Texas, Florida, Mexico, Costa Rico, Europe and Japan. As yet little reference has been made in the literature regarding its toxicity. So far as my search of the literature enables me to judge, no case of poisoning from its bite has been reported from this region.

AGRANULOCYTIC ANGINA FOLLOWING PROPHYLACTIC TYPHOID VACCINATION

LEON BROMBERG, M.D., AND PAUL MURPHY, M.D., ST. LOUIS

In a survey of the literature from the first description of agranulocytic angina by Schultz[1] in 1922 up to December, 1928, we have found a total of 152 cases conforming in general to the clinical criteria that he outlined. Although the etiology of the disease is entirely unknown, most observers are agreed that the marked reduction or total absence of granular leukocytes, which is the remarkable finding common to all cases, occurs as a result of some obscure septic or toxic bone marrow depressant. We have recently observed a case showing abnormal reaction of the hematopoietic system which occurred so directly after prophylactic injections of typhoid vaccine as to suggest that this may have been the toxic agent that incited the clinical manifestations of agranulocytic angina. This is a circumstance previously unmentioned in the literature.

REPORT OF CASE

E. W. L., a white woman, aged 50, entered the Jewish Hospital at St. Louis, June 1, 1928, in the service of Dr. Albert E. Taussig, her chief complaint being sore throat which had developed during the course of a fulminating illness. Her past history included an anterior suspension of the uterus in 1916, an achilles teniotomy in 1917, and a cesarean section in 1919. Previous to this she had borne three healthy children. On all former hospital records, the routine blood studies, such as the Wassermann reaction, had been negative. Bronchitis with asthma followed the cesarean section, but recovery was complete. For the past twenty years the patient had shown symptoms of hypothyroidism with a gain in weight from 128 pounds (58 Kg.) in 1911 to 186 pounds (84.4 Kg.) in 1928. She did not tolerate thyroid substance and did not derive any benefit from pituitary. In 1925 there was an attack of ureteral colic with spontaneous recovery. Since 1926 there had been a few attacks of mild angina pectoris.

In the spring of 1928 the patient requested immunization against typhoid before a contemplated trip to Europe. The present illness seemed to date definitely from the time of the inoculation of typhoid vaccine. May 14, the patient received a subcutaneous injection of 0.5 cc. of a nationally known preparation of typhoid-parathyphoid vaccine. Within six hours she had a severe constitutional reaction characterized by malaise and fever which persisted for two days. There was a moderate local reaction, but no constitutional allergic manifestations occurred. Her husband received a similar injection from the same material without any unusual symptoms. May 22, the patient received 1 cc. of the same vaccine; malaise, fever and prostration occurred within four hours. Her husband received his second injection without mishap.

For the first few days following the second injection, the patient's temperature was elevated each evening and persisted so throughout the night, returning to normal during the day. Later the fever became continuous and remained so. May 26, four days after the injection, she complained of sore throat, and a moderate gingivitis was present with swelling and tenderness in the glands below the jaw. A preponderance of Vincent's organisms was found in a direct smear. Five per cent chromic acid was applied locally and a sodium perborate mouth wash was ordered. A blood culture at this time was sterile. The leukocyte count was 5,400; unfortunately a differential count was not made. The urine contained 0.1 per cent of albumin and a few hyaline and granular casts. During the next five days an ulceration with a necrotic base appeared around the left upper molars, spreading steadily with hemorrhagic margins. The uvula became intensely edematous. A small pustule at the right nasal orifice developed into a cellulitis which involved most of the nose. A slight infection of a hair follicle on the left labium majus resulted in an intractable area of induration which was painful and tender. May 31, a leukocyte count was 7,000, with a differential count showing 45 per cent lymphocytes, 3 per cent basophils, 2 per cent eosinophils and 50 per cent large mononuclear and transitional cells. During an intensive search, polymorphonuclear neutrophils could not be found.

When admitted to the hospital, the patient looked critically ill and showed marked prostration, with a fever of 102 F. and a pulse rate of 100. Positive physical observations included swollen gums, a necrotic ulcer in the hard palate, edematous uvula, cellulitis of the nose, cervical adenitis, a precordial systolic murmur, and an area of induration on the left labium majus. The blood pressure was 100 systolic and 70 diastolic. Neither the spleen nor the liver could be felt through a very obese abdominal wall. The patient's course in the hospital was one of progressive decline. On the second day after her admission, the temperature rose to 105 F. and remained at approximately this level until she died. In an attempt to restrict the cellulitis, she was given a roentgen irradiation of the face. On the third hospital day she was given a transfusion of 250 cc. of citrated blood, and the following day a second transfusion of 500 cc. of citrated blood. When first admitted to the hospital the patient had periods of delirium, which changed to stupor and final coma in the ensuing four days. All the infected foci noted on admission spread rapidly; the patient developed a bronchopneumonia and died four days after entering the hospital. This was twenty days after the first typhoid vaccine inoculation and eight days after the development of the sore throat. An autopsy could not be obtained.

Summary of Laboratory Observations

Date	White Blood Cell Count	Eosinophils	Basophils	Polymorphonuclears	Lymphocytes	Mononuclears and Transitionals	Red Blood Cell Count	Hemoglobin, per Cent	
5/26	5,400	.....	.....	.....	.....	.....	5,500,000	95	Sore mouth
5/31	7,000	2 %	3 %	0 %	45 %	50 %			
6/ 1	5,400	0.7%	1 %	0.7%	59.6%	38 %	.....	92	Entered hospital
6/ 2	4,650	0.3%	0.7%	0.3%	47.4%	51.3%	5,415,000		
6/ 3	5,250	0	0.3%	0	60 %	39.7%	4,380,000	..	Transfusion
6/ 4 a.m.	4,175	0	0	0.7%	52.6%	46.7%	4,635,000	88	Transfusion
6/ 4 p.m.	5,600	0	0	0	55.3%	44.7%	.....	..	Bronchopneumonia

6/5/28: Patient died at 3 a.m.

Repeated specimens of urine showed from 0.1 to 0.2 per cent albumin with hyaline and granular casts.

Vincent's organisms were demonstrated in the direct smear from oral lesions. Blood culture, the Wassermann reaction, stool examination and nonprotein nitrogen were all negative, or within normal limits.

Three hundred cells were counted in all differential blood counts. The total leukocyte count is higher than that usually reported in agranulocytosis. The considerable relative and absolute monocytosis is also worthy of note. The blood platelets, as estimated from the stained smear, were normal.

COMMENT

Until clinical and laboratory research has thrown more light on the pathogenesis of agranulocytic angina, we can only speculate on the rôle the typhoid vaccine may have played in this case.

The response of normal persons inoculated with typhoid vaccine has been thoroughly analyzed by Smith,[2] who found that a leukocytosis occurred in the majority of a large group of soldiers who received triple typhoid vaccine. There was never a significant leukopenia in any of the men examined from four hours to several days after vaccination. A careful review of all the accidents following typhoid vaccination which

1. Schultz, W.: On Different Throat Affections, Deutsche med. Wchnschr. **48**: 1495-1497 (Nov. 3) 1922.

2. Smith, J. W., Jr.: Reaction of Leukocytes After Vaccination with Army Triple Lipovaccine, J. A. M. A. **72**: 257 (Jan. 25) 1919.

have been reported in the recent literature has failed to disclose a single instance in which agranulocytosis resulted. In the few fatal cases reported, death was usually attributed to anaphylaxis and occurred within a few hours of the injection.

The fact that a temporary reduction in the circulating leukocytes may occur after the injection of any foreign protein substance has been recognized. Cowie and Calhoun[3] found that the intravenous injection of typhoid vaccine almost invariably initiated an immediate leukopenia with a corresponding decrease in the polymorphonuclear cells. Within two hours there was usually a reversal of the blood changes resulting in leukocytosis.

In the case which we observed the symptoms were so closely identified with the antityphoid vaccination that they are not considered a coincidence. Since protein shock has been shown to be accompanied by blood changes analogous to those demonstrated in our case, it is suggested that the agranulocytosis may have resulted from an overwhelming foreign protein reaction in a sensitive individual.

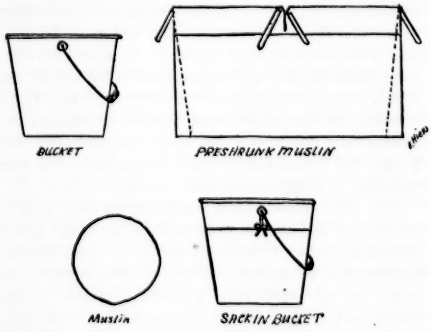
600 South Kingshighway—3676 Blaine Avenue.

KEEPING THE PLASTER BUCKETS CLEAN *

E. T. HIER, KANSAS CITY, KAN.
Operating Room Orderly

Before the cast is made, the plaster-of-paris bandages are soaked in water until the bandages have become well saturated. The bandage, when ready to be used, is grasped by the ends; and by slightly twisting the hands in opposite directions and at the same time bringing the hands together, so as to form a little bulge in the middle of the bandage, the excess water is expelled. Care is exercised in retaining as much plaster on the bandage as possible. After the bandage has been wrung out it should be used immediately as it soon becomes set.

During this procedure a great deal of the plaster works out of the bandages and settles in the bottom of the bucket. After the water becomes saturated, the plaster becomes set. When the water is poured off, the plaster has set so hard that a great deal of time and labor is required to clean the buckets.



I eliminate this difficulty by having a cloth sack, made of preshrunk, unbleached muslin, placed in the bucket. Allowances are made for the ends of the sack to extend over the sides of the bucket and the ends to be tied around the bail to keep it from sliding into the bucket. The water is poured inside the sack, and this causes the sack to adhere to the sides of the bucket. After the bandages have been soaked, the sack is removed. It has acted as a filter, and clear water remains in the bucket. The sack can be turned inside out and the contents dumped into the garbage can. If a little plaster still adheres, this can easily be washed off or the sack wrinkled until the plaster is liberated.

3. Cowie, D. M., and Calhoun, Henrietta: Nonspecific Therapy in Arthritis and Infections, Arch. Int. Med. **23**: 69 (Jan.) 1919.

* From the Bell Memorial Hospital.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING REPORT.

H. J. HOLMQUEST, Secretary.

INTERNATIONAL X-RAY UNIT OF INTENSITY

The Council on Physical Therapy of the American Medical Association approves the following proposals adopted by the Second International Congress of Radiology, held at Stockholm. In view of the fact that rapid progress is being made in x-ray measurement and in knowledge of x-ray phenomena, these recommendations should be regarded as being of a provisional character.

1. That an international unit of x-radiation be adopted.

2. That this international unit be the quantity of x-radiation which, when the secondary electrons are fully utilized and the wall effect of the chamber is avoided, produces in 1 cc. of atmospheric air at 0 C. and 76 cm. mercury pressure such a degree of conductivity that one electrostatic unit of charge is measured at saturation current.

3. That the international unit of x-radiation be called the roentgen, and that it be designated by the small letter r.

4. That various standard methods be employed to establish the unit.

5. That for all comparative purposes it is advisable to employ ionization chambers which have been calibrated in terms of a standard chamber for x-radiation of the various qualities employed. It is also advisable to make the wall effects of these chambers as small as possible.

6. That the practical instrument used to measure x-ray output be called a dosage-meter.

7. That the constancy of the indications of the dosage-meter be tested by means of gamma radiation emitted from a definite quantity of radium element, the measurement being carried out always under the same conditions.

8. That any specification of dosage is incomplete without specifying the quality as well as the quantity of the radiation. The quality of x-radiation used for practical purposes is very varied, and it would be impracticable to give a complete specification of it; but much information can be obtained from a knowledge of the degree of absorption of the radiation in standard materials, the peak voltage applied to the tube, together with the filter employed and the general character of the high-tension apparatus.

For practical purposes the quality may be expressed by stating the half value layer in a suitable material, or by stating the effective wavelength as determined by the percentage amount of radiation transmitted through a given thickness of a suitable material (copper or aluminum).

Diabetes and Cataract.—During the course of diabetes, cataract may appear independent of the sugar content of the blood or urine. Such a cataract may be a senile or a diabetic cataract and the two cannot be differentiated clinically. In younger people, a cataract due to diabetes appears as a bilateral, subcapsular, rapidly appearing and rapidly maturing opacity of both lenses. In older people, the same may hold true, but it is impossible to say whether such an opacity is senile or diabetic. —Gradle, H. S.: Diabetes from the Standpoint of the Ophthalmologist, *J. Indiana M. A.*, January, 1929.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 13, 1929

THE DEVELOPMENT OF THE BREAST FED BABY

At the opening of the present century, persons who were interested in the welfare of children were constantly being reminded of the unquestionable advantages that accrued to those babies who in early life enjoyed the opportunity to secure nature's food supply—their own mother's milk. The additional statement was made that, in case of misfortune depriving a child of its natural food supply, the best substitute is the milk of some other healthy woman with a baby of approximately the same age; unfortunately, this kind of substitute is not readily commanded by the average family. The faithful cow must usually be relied on when the normal supply of milk is not available. The appeal to statistics readily brought support for these contentions. For example, a study of nearly 50,000 babies born alive in Berlin in 1890 showed that about one fourth were dead at the end of the first year, of whom one in two was bottle fed and only one in thirteen breast fed. A similar study made by the Children's Bureau of the United States Department of Labor in 1915 in Johnstown, Pa., showed that at every month of the first year the mortality of the artificially fed babies was from two to four times as great as for the breast fed, while that of babies with mixed feeding lay between the other two. Of course the highest mortality was among the youngest infants, the mortality of artificially fed babies at 2 months of age being 237 per thousand, while at 8 months it had fallen to 53 per thousand. On the other hand, the mortality of breast fed babies at 2 months was only 72, and at 8 months 26 per thousand.[1] Then, too, there were evidences that the breast fed baby has a better chance not only of surviving the perilous first year but of growing to manhood as well.

The assumption that any food except mother's milk is a risk for a young baby has begun to receive some debate in more recent years. An enormous increase in knowledge of the fundaments of nutrition and the essentials of an adequate diet has developed. No doubt scientific research will eventually enable the dietitian to provide a thoroughly acceptable food mixture for man at all stages of his development. The goal of suitable artificial feeding even during infancy is much nearer at hand than it was earlier in the century. The problems of energy, protein, inorganic salts and vitamin requirements have been vigorously attacked in resourceful ways. Even mother's milk has been subjected to careful chemical and biologic scrutiny with respect to its adequacy in all known details and the possibility of its improvement through maternal care.[2]

It cannot yet be asserted that eminent success is being obtained by the "rank and file" of those who rear infants with artificial foods. This does not mean that two decades of research have counted for naught but rather that the novelties of science are, as a rule, slow in penetrating into the long established practices of the human family. Recently THE JOURNAL presented a comparison of the later physical and mental growth of two groups of children, one of which was breast fed, the other including those who had experienced artificial feeding. The study was made under the auspices of the Elizabeth McCormick Memorial Fund by Hoefer and Hardy,[3] great care being exerted to make the statistics worth while. The investigation showed that children who were artificially fed were, on the whole, inferior physically and mentally to the breast fed. Except for height, they ranked the lowest in all the physical traits measured. From the standpoint of nutritional indexes, they were the poorest nourished group. On the average, they were the most susceptible to diseases of childhood. In learning to talk and to walk, they were the slowest of all the groups. In mental development the artificially fed ranked next to the lowest, the lowest being those breast fed from ten to twenty months. Of the children with superior intelligence the smallest percentage was found in the artificially fed group. Of the artificially fed children, not a child was classified as being exceptionally bright.

Lest one conclude from the foregoing story that it might be a real advantage to prolong the usual period of breast feeding beyond the period of from four to nine months commonly practiced in this country, we hasten to call attention to a further outcome of the studies at Joliet. Children who were fed exclusively on breast milk longer than nine months, although apparently developing physically at a fairly normal rate, were mentally the poorest of all the groups. As the length of the nursing period increased beyond nine months, there was a progressive decrease in the intelligence ratings. This is doubly significant in view of the custom of prolonged breast feeding carried out by the mothers of certain countries, particularly where the

1. These data are quoted from Rose, Mary S.: Feeding the Family, New York, Macmillan Company, 1924.

2. Macy, Icie G., and Outhouse, Julia: The Vitamin Content of Milk Used in Infant Feeding, Am. J. Dis. Child. **37**: 379 (Feb.) 1929.

3. Hoefer, Carolyn; and Hardy, Mattie C.: Later Development of Breast Fed and Artificially Fed Infants, J. A. M. A. **92**: 615 (Feb. 23) 1929.

V 92
1929

difficulties of securing suitable supplies of cow's milk are considerable. One may well ask whether the observations of Hoefer and Hardy represent mere coincidences or whether rather they represent true causal relationships between diet and infant welfare. The artificial foods involved in this study were varied and far from well selected. The outcome should serve as a stimulus to the speedy introduction of far better substitutes for breast milk than are now being employed in many cases. After all, as Rose [4] has recently remarked, no matter how strong our convictions as to the importance for the baby of breast feeding through the major portion of the first year, we cannot shut our eyes to the fact that circumstances may arise which make the substitution of some other form of nourishment imperative. It behooves us therefore to be prepared to deal intelligently with such emergencies.

ACTION OF MORPHINE ON THE ALIMENTARY TRACT

Opium and its derivatives, notably morphine and codeine, still have a conspicuous place in the therapeutic procedures employed by the physician of today. Among the undesired pharmacodynamic actions of these drugs is their constipating effect, particularly after large doses, which usually has to be taken into account in the management of patients, and frequently must be counteracted. Consequently an adequate understanding of the physiologic functions of the alimentary tract that are adversely affected and the anatomic parts concerned in the perverted behavior is eminently desirable; for on such information alone can one hope to formulate rationally any wholesome remedial measures or precautionary procedures.

It might be assumed that a subject of such fundamental clinical importance would have been adequately studied long ago. There has not been a complete dearth of investigations on the alimentary pharmacology of the opium alkaloids; but the literature of the topic is far from satisfying. This explains why Hatcher and Wilbert [5] merely said: Many investigators have endeavored to explain the direct and indirect influence of morphine on the gastro-intestinal tract, but there is still much to be learned on the subject.

The researches of Plant and Miller [6] at the State University of Iowa have permitted a better understanding of the action of morphine on different parts of the alimentary canal. They show that the most constant and lasting effect of morphine on gastric motor activity is a decrease in the muscular tone of the stomach wall. The decrease in tone always outlasts the decrease in amplitude and frequency of peristaltic waves. The duration of the effects is in direct proportion to the dose. The degree of effect, particularly the fall in tone, apparently depends on the tone level existing at the time of administration. Heroin, codeine, papaverine and narcotine produce effects similar to those of morphine. Heroin is as potent as morphine, codeine is approximately one-fourth as strong, while papaverine and narcotine are much weaker. The latter shows less action than any of the other opium alkaloids that were tested. This change of tone, accompanied by relaxation of the lower fundus and pyloric antrum, attend a disappearance of peristaltic activity. In the ileum, increase in muscular tone and in the frequency and amplitude of peristaltic waves was observed. In the colon the pronounced effect is a marked increase in tone, accompanied by more continuous peristaltic activity, although the rate and amplitude (depth) of peristaltic waves are not materially altered. These effects were noted in man as well as in laboratory animals.

The following interpretation of the results described in relation to the constipating action of opium is ventured by Plant and Miller: Relaxation of the stomach wall and decrease in peristalsis of the pyloric antrum decrease the rate of discharge of gastric contents into the duodenum. Consequently the stomach contents are distributed in small quantities throughout the small intestine, and this would lead to more complete digestion and absorption. The increase in tone and in peristaltic activity of the small intestine would produce more even distribution of the content and further increase absorption. That the increase in peristaltic activity does not serve to hurry the content along the intestinal canal sufficiently to produce liquid stools is evidenced by the absence of purgation in animals and in man. In the colon, Plant and Miller conclude, the marked increase in tone, which often reaches the degree of spastic contraction, serves to hold back the material from the sigmoid and rectum, facilitates absorption, and renders the residue drier. These factors seem to explain the constipating effects of opium.

With respect to the antidiarrheic action of the opium alkaloids, the Iowa pharmacologists assign a rôle to the increase in tone of the small and the large intestine. There seems to be no question, they aver, that local distention of the intestine is a potent stimulus to powerful peristaltic waves that push the content rapidly onward toward the rectum, and such distention may be one of the factors in diarrhea: since opium and morphine markedly increase the tone throughout the intestine, they decrease the possibility of distention by its content and this must be an important factor along with decrease in the rate of discharge from the stomach in relieving diarrhea. Again, stretching due to distention is a factor in producing intestinal pain, such as occurs in colicky attacks. Plant and Miller argue that

4. Rose, Mary S.: The Foundations of Nutrition, New York, Macmillan Company, 1927.
5. Hatcher, R. A., and Wilbert, M. I.: The Pharmacology of Useful Drugs, Chicago, American Medical Association.
6. Plant, O. H., and Miller, G. H.: J. Pharmacol. & Exper. Therap. **27**: 316 (June) 1926; The Effect of Morphine and Some of the Other Opium Alkaloids on the Muscular Activity of the Alimentary Canal: III. Action on the Stomach in Unanesthetized Dogs, ibid. **32**: 413 (April) 1928; IV. Action of Morphine on the Colon of Unanesthetized Dogs and Man, ibid. **32**: 437 (April) 1928.

the increase in tone of the musculature of both the small and the large intestine, following the administration of the opium alkaloids, would cause more even distribution of the content and lessen the tendency to distention, thus removing one factor in the production of pain.

HYPERVITAMINOSIS

From data relating to the therapeutic potency of irradiated ergosterol in protecting experimental animals against rickets on an otherwise rachitic diet, it has been estimated that one part in many millions of food suffices to secure the prophylactic purpose. In human infants a daily dosage of considerably less than 4 mg. ($^{6}/_{100}$ grain) has already been demonstrated to be curative in cases of unmistakable rickets; and there is little doubt that this quantity may be considerably larger than the minimal protective dose. It should not be surprising, therefore, if larger quantities of such potent substances would exert a pronounced effect on the organism in directions that may not always be merely beneficial. Pharmacology is replete with instances of baneful and of beneficial results arising from exhibition of the same drug, the outcome depending on dosage. Small doses of highly toxic alkaloids are used as remedial measures in medical practice. The acid of the gastric juice becomes a corrosive poison if it is administered in the high concentration of commercial muriatic acid.

The medical world, and even the lay public, is rapidly becoming accustomed to the expression avitaminosis and what it implies in the domain of impaired health. Recent demonstrations have raised the question whether the eventuality of occasional "hypervitaminosis," that is, ill effects from a surfeit of vitamins, needs to be taken into consideration seriously. Several years ago it was reported by Japanese biochemists who were engaged in the preparation of "concentrates" of the fat soluble vitamins of cod liver oil that enormous doses of the latter might become lethal. These assertions have been denied by subsequent investigators. The demonstration that irradiated ergosterol, the equivalent of vitamin D, produces measurable effects, represented by an increased content of calcium in the circulating blood, has furnished an objective method for following its physiologic action. Of late there have been reports of experiments both in this country and abroad indicating the possibility of inducing hypercalcemia through use of large doses of irradiated ergosterol.[1] Indeed, the vitamin D itself may be destroyed by overirradiation.

There is no longer any doubt that harm may result from extremely excessive doses of irradiated ergosterol in rachitic animals. Recently, Klein[2] of the Jewish Hospital in Brooklyn referred to the production of anorexia and loss of weight with impairment of the general physical condition and the rate of growth in rats receiving massive doses. The blood calcium concentration was 50 per cent higher than that of the control animals and those fed cod liver oil, while the phosphorus remained approximately the same. In England, Harris and Moore[3] have reported that young rats lost weight rapidly and died when receiving synthetic diets containing 0.1 per cent of an irradiated (but not nonirradiated, overirradiated or heated) ergosterol (i. e., about 100,000 times a minimal protective dose). There was loss of appetite, poor condition of coat, diarrhea, and inanition. Rats receiving massive doses of vitamins A and D concentrate from cod liver oil, in conjunction with a diet deficient in the vitamin B complex, developed loss of hair and severe skin lesions.

It would, indeed, be most unfortunate if such reports were permitted to dispel the interest that has been awakened in the physiologic significance of potent preparations of vitamins or to decrease the wholesome interest that has been awakened in antirachitic prophylaxis in recent years. The greatly increased use of cod liver oil, for example, has undoubtedly been beneficial in the field of public health, where it has been vigorously promoted by medical advice. The hypervitaminosis to which reference is made in the experimental researches has involved the use of truly enormous doses—quantities sometimes reaching 100,000 times the minimal effective dose. From this standpoint it is conceivable that overdosage of any of the common nutrients might lead to ill health. Too much starch or protein or salt or iodine—or even sunshine—is unwholesome. The difference in the case of the vitamin concentrates lies, in one respect at least, in the small quantities that are requisite for well being and in the consequently relative ease with which enormously larger amounts might be consumed.

It might be argued that the injurious effects reported from animal tests with massive doses of certain concentrates are due to toxic contaminants. This possibility cannot be entirely dispelled at present. Nevertheless there is a duty to prevent alarmist fears prejudicial to the use of legitimate products. There are no evidences of harm, but many indications of striking benefit, from the customary intake of fat soluble or other vitamins. The quantities required to produce toxic effects have been administered at levels altogether outside those that are in practice used commercially or that could be employed in clinical practice. In a comparison between the laboratory observations and the clinical aspects, Harris and Moore have estimated from their toxic doses calculated for a child weighing 28 pounds (12.7 Kg.) on a basis of relative body weight that 2 Gm. of irradiated ergosterol, 20 Gm. of cod liver oil concentrate and 300 Gm. of cod liver oil would have been administered daily. Toxic effects at such enor-

1. Pfannenstiel: Klin. Wchnschr. **6**: 2310, 1927. Kreitmair, H., and Mall, T.: München. med. Wchnschr. **75**: 637 (April 13) 1928. Hess, A. F., and Lewis, J. M.: Clinical Experience with Irradiated Ergosterol, J. A. M. A. **91**: 783 (Sept. 15) 1928.

2. Klein, I. J.: Effects of Massive Doses of Irradiated Ergosterol, J. A. M. A. **92**: 621 (Feb. 23) 1929.

3. Harris, L. J., and Moore, T.: "Hypervitaminosis" and "Vitamin Balance," Biochem. J. **22**: 1461, 1928.

mous dosages should not in any way discourage the rational use of the properly standardized materials at the ascertainable correct physiologic levels. For the benefit of those who, despite these assurances, wish to be on their guard for evidences of effects beyond the desired benefit, one may refer to the experiences reported by Hess and Lewis.[1] Hypercalcification (eburnation), abnormally high blood pressure and hypercalcemia need at least to be borne in mind during the present stages of educational adjustment to new therapeutic possibilities.

Current Comment

THE MINERAL CONTENT OF CEREAL GRAINS

With the rapidly growing knowledge of the physiologic importance of food factors that are usually present only in small quantities in our diet, more attention is being paid to these formerly neglected components. This statement applies conspicuously to certain inorganic elements in the diet and to the newly recognized vitamins. A generation ago iron, the conspicuous inorganic component of the red blood corpuscles, was almost the only mineral nutrient to receive extensive discussion in relation to food problems. Today the situation has changed. Not only do calcium and phosphorus share in dietary interest, but the reaction of the food intake—its potential acidity or basicity—elicit consideration. One even hears about relative proportions as well as absolute quantities of the mineral elements involved in food. Alert advertisers have not been slow to grasp the apparent significance of such items in relation to many foods whose sale is being promoted through prominent reference to specific nutrient virtues. This is conspicuously true of the cereal products that enter so largely into the American regimen. A recent study by Greaves and Hirst[2] at the Utah Experiment Station in Logan is of interest in this connection for it illustrates that the mineral content of the common grains wheat, oats, barley and corn show surprisingly large variations when many samples grown under diverse agricultural conditions are examined. For example, wheat grown in some localities was found to carry six times the calcium of wheat grown in other localities. Wheat raised with 67½ inches of irrigation water contained 2.6 times as much calcium as did similar wheat grown on similar soil without irrigation water. Some varieties of wheat even though grown under similar conditions contained twice the calcium found in other varieties. Similar variations existed in the case of the oats and barley. Many of these grains were grown on highly calcareous soil and often with irrigation water, which are the reasons for the high calcium content of these grains. Similar variations were found in the content of potassium, phosphorus, magnesium and iron. The question may well be raised whether such features may materially modify the nutritive value of grains grown on highly fertile calcareous soils in contrast with the usual condition. One is dealing with small differences, yet the nutritive needs likewise are comparatively small. In any event, the Utah reports indicate the futility of making bold generalized claims for differential mineral value between the common cereal products so long as the source and cultivation of the grains in question is neither known nor recognized.

2. Greaves, J. E., and Hirst, C. T.: The Mineral Content of Grain, J. Nutrition 1: 295 (March) 1929.

WAR GASES AND TUBERCULOSIS

On April 22 occurs the fourteenth anniversary of the introduction of toxic gases into modern warfare on the fields of France. Those who survived the horrible experiences of a campaign conducted with these new chemical agencies, and who learned indirectly about the realities of such combat, have pictured the dire consequences to the victims. The respiratory distress induced by most, at least, of the noxious products directed attention to pulmonary complications; and the conclusion was early, and hastily, reached that the newly employed toxic gases cause a predisposition to pulmonary tuberculosis, or at least cause the reactivation of old healed lesions. Sufficient time has elapsed to secure dependable data regarding the actual outcome in the surviving victims of war gassing. The clinical experiences have been reported by various observers and have been reviewed by Koontz[1] of the Medical Research Division of the Chemical Warfare Service. He pointed out that there is a considerable degree of accord on the subject. Koontz[2] has recently reminded us that both the medical profession and the laity believed at first that soldiers who had been gassed would be especially susceptible to pulmonary tuberculosis. Subsequent facts did not justify this fear. The belief, however, that there is a close causal relationship between gassing and tuberculosis has remained firmly fixed in the minds of the public and also in the minds of many physicians who have not kept abreast of the times by studying the current medical literature. Although there is overwhelming evidence that gassing does not predispose to pulmonary tuberculosis, the question at issue is one that can be elucidated by direct experiment. Koontz has inoculated a large number of animals with virulent tubercle bacilli. Half of the animals were gassed for one hour with approximately the lethal dose of mustard gas; the other half were kept as controls. From six to ten weeks after their inoculation, all the animals were killed, necropsies performed, and the viscera studied for tuberculous lesions. Sixty-four per cent of the animals that had been gassed had pulmonary tuberculosis; 83 per cent of the controls had pulmonary tuberculosis. The tuberculous process was much more extensive in the control animals that developed the disease than in the gassed animals that contracted it. According to Koontz, these experiments clearly demonstrate that gassing with mustard gas has an inhibitory effect on the development of pulmonary

1. Koontz, A. R.: War Gases and Tuberculosis, Arch. Int. Med. **39**: 833 (June) 1927.
2. Koontz, A. R.: Mustard Gas and Tuberculosis, Arch. Int. Med. **43**: 90 (Jan.) 1929.

tuberculosis in the species investigated—a conclusion in harmony with earlier studies in the same field. Whatever the evils of exposure to the war gases may be, they do not include an augmented susceptibility to tuberculosis.

Association News

THE PORTLAND SESSION

Special Trains, Tours and Side Trips

The Indiana State Medical Association has arranged for a special train to Portland for the accommodation of its members and friends. Information concerning this train may be secured from Mr. Thomas A. Hendricks, executive secretary of the Indiana State Medical Association, 804 Hume Mansur Building, Indianapolis.

There will be a De Luxe Tour of Alaska following the annual session at Portland under the auspices of the Chicago Medical Society. A special train will leave Chicago at 11:30 p. m., July 3, and will go to Portland by way of the Illinois Central, Denver and Rio Grande Western and Union Pacific, arriving in Portland on the evening of July 7. On the evening of July 12 the party will leave Portland for Seattle, thence to Mount Baker National Park, and then will sail on the evening of July 15 from Vancouver through the Inside Passage to Ketchikan, Wrangell, Juneau and Skagway. From Skagway the party will go via White Pass to Carcross, where it will make a transfer to a steamship for a trip on Tagish Lake, returning to Skagway, where a ship will be boarded for Prince Rupert. July 22, the party will go to Jasper Park by way of the Canadian National Railways. After a day at Jasper Park the return trip will be made via Winnipeg and Duluth, with arrival in Chicago at 11:30 a. m., July 27. Further information concerning this tour may be secured from Dr. J. H. Hutton, secretary of the Chicago Medical Society, 185 North Wabash Avenue, Chicago.

The official itinerary of the Medical Society of the State of New York will be the New York Central Railroad to Chicago, the Burlington to St. Paul, and the Great Northern to Glacier National Park. The party will leave New York at 1 p. m., June 30, arriving at Glacier National Park at 7:30 p. m., July 3. Leaving Glacier National Park on the evening of July 6, the party will reach Portland, July 7. After the Portland Session, the party will go by way of the Union Pacific to Yellowstone Park, leaving Portland at 6 p. m., July 12, arriving at West Yellowstone at 7:30 a. m., July 14. Sunday, Monday, Tuesday and Wednesday, July 14, 15, 16 and 17, will be spent in the park. Salt Lake City will be visited on Thursday, July 18, and Denver will be the next place of call. Saturday, July 20, and Sunday, July 21, will be given over to a visit to the Rocky Mountain National Park. Leaving Denver on the evening of Sunday, July 21, arrival at New York will be on Wednesday afternoon, July 24. Further information may be secured from Dr. John A. Card, 215 Mill Street, Poughkeepsie, N. Y., or from Dr. Arthur W. Booth, 222 West Church Street, Elmira, N. Y.

In addition to the usual local sightseeing trips in and about Portland, arrangements have been made for several side trips of unusual interest. Mountain climbers will have an opportunity to climb Mount Hood, and those who can stand the strenuousness of an eighteen-day trip on horseback may avail themselves of the pleasure of a trip down the Sky Line Trail. Several shorter trips have been planned, including one by speeder up a narrow gage railroad along the Clackamas River, in which the zealous angler may flick a dry fly in the Clackamas or in the Oak Grove River, said to be two of the best trout streams in the Northwest. There will be an automobile trip around Mount Hood—a stage tour of 175 miles around the base of Mount Hood—returning by the Columbia River Highway. Another trip will include a climb up the trail on Eagle Creek to the Devils punch bowl or along Perdition Trail and down at Multnomah Falls. Those who are interested in sea fishing may take the trip to Tillamook by stage, from which point a deep sea boat will convey them far enough out on the Pacific to give them opportunity to try their luck with red snappers and ling cod. Some of these side trips are not at all strenuous, while others will require hiking boots and proper outing clothing. The necessary equipment for the Mount Hood Climb and the Sky Line Trail will include heavy full length woolen underwear, oiled shoes or boots with hobbed soles, and a heavy woolen shirt. Any outing suit or heavy business suit will serve, but two pairs of thin socks and at least one extra pair of heavy socks should be carried. An extra coat or sweater, two pairs of woolen gloves, dark glasses and plenty of cold cream should be included in the outfit. The trip along the Sky Line Trail will be strictly a mountain trip. While the weather is usually warm during the day, a storm is not unusual. For that reason clothing should be warm and one should have a rain proof garment of some sort. It is necessary to have a complete change of clothing for this trip, including a change of shoes. Riding boots or puttees should be worn. Those who take this trip should have sleeping bags provided with water-proofed covering. Fishing tackle, cameras and bathing suits will be in order. Dr. W. K. Livingston, chairman of the Out-Doors Committee, 1206 Stevens Building, Portland, Ore., will be glad to provide information concerning the various side trips arranged for the entertainment of the Fellows of the Association who go to Portland.

Tournament, American Medical Golf Association

The annual tournament of the American Medical Golf Association will be held at Portland, July 8. There are eight private courses and ten fee courses at Portland. The usual splendid prizes will be offered in the tournament and the annual meeting of the American Medical Golf Association will be held on the evening of July 8. All Fellows of the American Medical Association are eligible to membership in the American Medical Golf Association. Membership blanks and entrance blanks for the tournament may be secured from the secretary of the local golf committee, Dr. E. W. St. Pierre, Stevens Building, Portland, Ore.

Exhibit by the Section on Diseases of Children

The Executive Committee of the Section on Diseases of Children announces the following as members of the Committee on Section Exhibit: Drs. Hay Durant, Seattle; C. G. Grulee, Chicago; McKim Marriott, St. Louis; J. W. Rosenfeld, Portland, and L. Howard Smith, chairman, Portland.

As announced previously, this year's exhibit will deal with:

(*a*) The effects of vitamins as applied to infant feeding.
(*b*) Milk and its modifications.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 o'clock in the morning, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of April 15 to 20 will be as follows:

April 15. "Exercise for Business Men," by Dr. R. G. Leland.
April 16. "Food After Forty," by Dr. R. G. Leland.
April 17. "Diphtheria—A Neighborly Disease," by Dr. R. G. Leland.
April 18. "Diphtheria—A Neighborly Disease" (continued), by Dr. R. G. Leland.
April 19. "More Fallacies of the Food Faddists," by Dr. R. G. Leland.
April 20. "More Fallacies of the Food Faddists" (continued), by Dr. R. G. Leland.

Evening Health Hints from Hygeia at 8 o'Clock, Central Standard Time

April 15. Traffic Accidents.
April 16. Proper Auto Signals Will Prevent Accidents.
April 17. School Girl Gives Highway Conduct.
April 18. Misconceptions About Insanity.
April 19. Lemons.
April 20. Poisonous Hair Dyes.

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ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Fifth Annual Meeting, held in Chicago, Feb. 18, 19 and 20, 1929

(Continued from page 1189)

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 19—MORNING

TEACHING OF RELATED MEDICAL SUBJECTS

Some Needed Developments in Graduate Medical Education

DR. EDWARD H. HUME, New York: Inquiry is needed as to the way in which the medical needs of the community may best be met. Shall these needs be met entirely by general practitioners or by groups of men working in association; or shall the goal be to erect hospitals with private or public funds that shall be available to every unit of population? A matter of vital importance is that those concerned with medical education study to determine where the line should be drawn between undergraduate and postgraduate curriculums. All available educational pressure must be brought to bear on our citizenship, so that it may come to realize its own responsibility for lifting up the level of medical service. The community must provide the facilities and demand new vitality and new power from its own physicians.

A Medical School's Effort to Provide Physicians for Rural Communities

DR. THOMAS ORDWAY, Albany, N. Y.: To meet the medical needs of the rural districts and the towns which are the vital centers of such areas, Albany Medical College, the medical department of Union University, has developed the following plan, known as the five-point program: 1. Preference is given in the selection of medical students to those whose affiliations are in rural districts. 2. Students are primarily trained for general practice, and are properly fitted at moderate cost for such work. 3. Its graduates and other hospital interns are provided with data concerning opportunities and locations where physicians are needed. 4. There is cooperation with graduates and other physicians in the large district served by the medical college, giving them an opportunity to take graduate work and review and advanced courses, either formally or informally, as well as special work in all departments of the medical school. 5. By suitable publicity, rural communities are informed of the advantage of employing their local physician, who can care adequately for more than 90 per cent of their ills, and whose cooperation and interest are of the greatest importance in the care of the remaining 10 per cent of their difficulties.

DISCUSSION
ON PAPERS OF DRS. HUME AND ORDWAY

DR. JOHN O. POLAK, Brooklyn: For the past eight years we in New York have been intimately associated with graduate movements and we have learned that there are three types of men who need graduate instruction: 1. The man who intends to be a specialist, who is taken care of by the university that gives him basic instruction and the clinical school that gives him his residency over a period of from three to five years. We have been able to develop about one man each year under that scheme. 2. The man who takes residence for periods of from three to four months only, because he leaves his practice at considerable sacrifice. 3. The man who wants to be brought up to date and has medicine brought to him. In Brooklyn, through the agency of the county society, in cooperation with our medical school, we have been supplying these three types of instruction. The latter has been the popular one. The county society gives two series of lectures every year, with an attendance of from 300 to 500 men at every lecture. These are clinical demonstration lectures. In every hospital where teaching can be done, we have short intensive courses given as desired by the practitioner. From four to five men attend each class. During ten intensive hours, in the spring and in the fall, later methods of diagnosis are given. The third problem of carrying instruction to the physicians has been met by the location of our hospitals on Long Island. We have four medical centers, and we have been sending to these hospitals on Friday and Saturday of each week several men constituting a team. At the request of the local men, they got what they wanted, using the material supplied to us by those hospitals, and we feel that in this simple way we are making better physicians on Long Island.

DR. MCKIM MARRIOTT, St. Louis: I am very glad to see the subject of postgraduate instruction coming into its own. We have been so concerned in the past few years with the building of million dollar plants for the education of medical students that we have rather lost sight of the men in the field. We have, as it were, established a magnificent series of factories. We have been turning out a product but have failed to establish service stations. The continuous education of the practitioner is our function. If graduate medical instruction is really to accomplish its purpose, it must be planned seriously. We must not train these men by letting some of the younger members of the hospital staff talk to them by way of practice. We must use our best teachers for these men, and the results, I believe, will fully justify the effort. Recently we have made an effort to do this sort of thing at Washington University by the planning of courses especially for general practitioners. We have also attempted to bring medical education to the general practitioner by lending various members of our faculty to the universities of neighboring states for university extention work.

DR. W. S. THAYER, Baltimore: One point has not been taken up that is worth mentioning, and that is the attitude which the professor of surgery or medicine or any important branch of the university should have toward the general medical public. My first association in postgraduate work was in the years that I spent with Osler in Baltimore, and Osler, although he was not a great organizer, illustrated in his personal relations in a very wonderful way the attitude that a teacher should have toward his practicing colleagues. The thing that struck me most when I came to Baltimore was the way in which every visiting physician was greeted. Osler never let a country practitioner come to the hospital without holding out his hand. There was always an effort to give some postgraduate courses, and the successful postgraduate courses that we gave were the simpler courses in the fundamental sort of work. What we found the practitioner most desired was to spend four or six weeks in concentrated work following the clinics of the hospital, with the work so planned that he took part in the physical examination and the treatment of the patient in the ward, and even followed him, if he went there, to the pathologic laboratory. The practitioner went from the wards to the clinical laboratory and learned how to do the practical, everyday tests that we were doing. I was very much interested in what Dr. Ordway said. I feel that the sort of work they are doing is splendid. It shows that the teachers of his institution are taking the attitude toward the profession that they should. Members of the profession should be made to feel that the teaching institutions welcome them and that they are ready to offer them every opportunity to take part in the advantages that are theirs.

DR. A. T. MCCORMACK, Louisville, Ky.: I believe that it would be well to require a bookkeeping scheme from our teaching institutions, universities and medical schools, which would differentiate between the expenditures for the enormous and unnecessary overhead and the necessary research work that the wealthier institutions ought to carry and the actual expenditures for medical education, and that there ought to be charged against undergraduate medical education only the salaries of those members of our faculties who are taking care of undergraduate medical education. I think we would then realize that actually we are not increasing the cost of undergraduate medical education unnecessarily; we are not spending the enormous sums that appear to be spent for undergraduate medical education at all, but we have fooled ourselves into believing that we are doing it and that we are creating enormous plants which we had to create. I understand that it was necessary to do this at first in order to get the research done, because at that time we had not captured the imagination of the men of wealth of this country so that the money could be obtained in any other way; but we have their interest now.

Having accomplished our purpose, we should be honest with the public and tell them the truth; namely, that medical education is not as expensive as it appears to be; that research work is enormously expensive, and that there is a very considerable number of men who can do research. The absurdity of our present system is that we are attempting to impose on every student the idea that he is going to proceed under research methods.

DR. J. N. JENNE, Burlington, Vt.: One of the important reasons why young graduates do not want to go to the country and why physicians already practicing do not go there is the isolation, and the lack of contact with their brother practitioners and of opportunities for extension. It is vastly more important to keep the man who is already located there contented and happy, an object lesson to the young practitioners. One of the things we are doing to accomplish this end is to introduce the recent graduate or the young man who is to graduate soon to a country practice. Part of our senior course provides that each senior student must have four weeks of service in the country under a chosen practitioner. Both are enthusiastic. The student is glad to get out and see things as they are, and the kind of practitioner we have selected has been glad of the company of the student who comes fresh from college. Many of them have said to me, "Why, they are teaching me new tricks. They are telling me about things that I knew nothing about."

DR. T. J. CROWE, Dallas, Texas: Dr. Ordway's paper offers a constructive proposition, but, unfortunately, the conditions of Dr. Ordway's section of the country do not exist throughout the United States. In my state we have about 250 hospitals. Those hospitals are taking care of the rural section. The automobile has removed that section which we called the rural community. The young man who has been sent out by the medical college to take up his work in the rural community remains about three months, when his funds are exhausted and he writes to ask whether somebody cannot find him an assistantship with a well established physician. I do not know how that problem is going to be solved. It may be solved in Dr. Ordway's community. It may be possible when one is close to town. But what of those sections of the country where one drives 30 or 40 miles and scarcely sees a house or a habitation? What are we going to do for those sections?

DR. W. C. KAPPLEYE, New Haven, Conn.: The Commission on Medical Education was appointed primarily to study undergraduate medical education so called, but most of our deliberations have been on problems that have their roots in undergraduate training; that is, in the basic training in medicine. It is our belief that medical training as it is now conceived is largely designed to give the student a training in the fundamentals of the sciences underlying medicine, to teach him the proper methods and give him experience and practice under supervision in those methods, and to train him very thoroughly in sound habits of study in order that this may become a continuing equipment for his self-education as he goes on in life. I think that we do a great deal in undergraduate medical education to render the student unfit psychologically for independent practice.

DR. WILLIAM ALLEN PUSEY, Chicago: Perhaps we are spending too much money on what might in the vernacular be called the frills of medicine—fine buildings, rooms for students, opportunities to enjoy the accessories of life that really come to the ordinary man only after he has achieved success and that are as apt to spoil the rich boy as they are the rich medical school.

MEDICAL SCHOOLS AND TEACHING HOSPITALS

The Interest of the Hospital Section of the Duke Endowment in Medical Education

DR. W. S. RANKIN, Charlotte, N. C.: One physician for every thousand persons will be amply sufficient, provided the problem of distribution is solved, and further, that to the one leg of the tripod of professional services, medical personnel, are added the other two legs, medical facilities and medical assistance; that is, nurses and technicians. The last two, hospitals and nurses, are inseparably associated. The augmented flow of population toward the city has not played such a major rôle in the uneven distribution of physicians as Mayers and Harrison ascribe to it. Improved communications have influenced in a large way the removal of physicians from rural and small town practices to the larger population centers of the same county, but only in a very limited way has this factor influenced physicians to cut loose entirely from a previously established base of supplies and to move to some distant city. In short, this factor has tended to agglutinate the units of the profession but otherwise has not affected their general distribution over the field. Every medical school, every medical teacher, every medical journal, the outstanding influences in the profession which appear on the programs of medical meetings, national, state and local, are teaching directly by spoken and written word, and indirectly but even more effectively by example, that modern medicine cannot be practiced without the facilities that are to be found in hospitals; and in proportion to the idealism of those who are taught—the younger, ambitious men and the older men who have kept abreast of the advances of medicine—is their teaching effective. All of which explains the shift, both quantitatively and qualitatively, of the many and the better physicians from rural practices to city practices.

The hospital, affording through its facilities and equipment and personnel the only means by which the younger and the older students of medicine can carry into effect their knowledge and ideals, is the magnetic force that has depleted rural areas and crowded urban centers with physicians. It is because of the confidence of the trustees of the Duke Endowment in this statement of the cause of our present dislocation of medical services that the hospital section is at present expending approximately $1,000,000 a year in the operation and construction of hospitals in North and South Carolina. The trustees believe firmly that a more even distribution of facilities will bring about a more even distribution of physicians. To the trustees of the Duke Endowment the hospital is not an end in itself but a means for restoring and building up a local medical service that will care not only for the hospital patients in the community but for all the sick, both those seriously ill brought to the hospital and those less seriously ill who are confined in their homes through the whole county. There is good reason to believe from results already in evidence that the small local hospital will prove in itself to be a sufficient cure for the condition we are considering.

If, however, other remedies are found to be necessary, there are two that certainly would be helpful in the present situation and, possibly, may be necessary in the further treatment of it. The two remedies are (1) a standardization, through the influences here represented, of the specialties, one of the requirements for specialization, hospital residence excepted, being an experience in general practice of from three to five years' duration; and (2) the encouragement of the development of adequate student loan funds in medical colleges, so that the medical college would be in a position, through the principle of reciprocal obligation, to influence many of its students in need of financial assistance to locate in centers of population not exceeding 10,000 and where hospital facilities were available. The interest of the Duke Endowment in the field of medicine is not limited to the work of its hospital section, which is more directly concerned with the operation and construction of local hospitals, but embraces as well the construction and operation of a large central hospital and medical school, the Medical Department of Duke University. There will be the closest reciprocal relation between the Medical Department of Duke University and the local hospitals which are developed and operated through the assistance of the hospital section of the Duke Endowment.

The Teaching Hospital and the Medical School

DR. C. R. BARDEEN, Madison, Wis.: The medical school needs an adequately supported hospital, as much as possible under the direct control of the clinical faculty of the medical school, for two chief purposes: (*a*) to introduce the student to practical clinical work, and (*b*) to promote research in clinical medicine and to train specialists. The introductory teaching of students should be in charge of clinicians who devote their full service to the care of patients in the hospital in which this teaching is done, to teaching the students and to clinical study. If the major part of the introductory teaching is to be done

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in the outpatient department, the main energies of the teaching staff should be concentrated there; if in the wards, it should be concentrated in the wards. Giving students the right start in meeting and dealing with patients is probably the most difficult step in clinical teaching. Previous training has dealt chiefly with the abstract. The student must now learn to apply general principles to meet concrete situations. In this teaching residents and interns are of great value if they come to understand that the quickest way to learn is to help in teaching. Our best teaching hospitals are those approved for both residents and interns, and nearly two thirds (67 out of 105) of the hospitals thus approved by the American Medical Association are used for teaching undergraduate students. If the student can be given a good start during the third year of the medical course in the application of clinical methods to promote the welfare of individuals, he can be given much more freedom during the subsequent part of his training than would otherwise be possible. Practitioners too busy to bother with crude beginners can find real pleasure in aiding in educating young men who have some experience in dealing with the sick and with hospital procedures. Through clinical clerkships and assignments to outpatient departments, with an experienced practitioner in charge of only one or two students at a time, student, patient and practitioner can all profit.

It is here that associate teaching hospitals and clinical teachers become of greatest value. These associate teaching hospitals may be grouped as follows: (*a*) large public hospitals, either government owned or tax supported, willing to turn over certain services to the faculty of the medical school for teaching; (*b*) hospitals which do not assign definite services to a medical school but which permit members of the hospital staff to assign students for work with patients in their charge. For work in such hospitals the student is assigned not to the hospital but to a member of the staff of the hospital who is willing to be responsible for and act as preceptor to the student. Most valuable training may be given in this way and a wide range of hospitals may be utilized. With the right supervision advanced students may be assigned to aid in the care of private as well as of public patients. The university type of teaching hospital has been fostered and to a large extent been made possible in this country by those who have been chiefly concerned with clinical research. In some of those schools for which financial support for hospital service and clinical research has been most liberal, no attempt has been made to make use of associate teaching hospitals. I can name at least six such schools. In some of these an attempt has been made to preserve time for research on the part of the staff by limiting the clinical activities of the staff and greatly restricting the number of students. The problem of an adequate supply of well trained practitioners for the public is not to be met in this way. We need constant cooperation between professional practitioners and professional teachers and a constant realization on the part of the medical profession of an obligation to play an active part in training the coming generation of physicians. Every physician needs to be both a student and a teacher. Medical schools cannot afford to be narrowly self-centered however richly endowed. Medical schools should tend more and more to aid the practicing physician as a student and to seek his help as a teacher.

With the development of university teaching hospitals, we should look forward not to a diminishing but to an ever-widening use of other hospitals as centers for teaching not only members of the staff, nurses, residents and interns but also advanced undergraduate students. To make this possible we need above all organization and idealism. Academic conceit on the one hand, professional jealousy and commercialism on the other hand, are the biggest obstacles to be overcome. Both the universities and the medical profession must look to the public for support of medical schools and hospitals through endowment and taxation. This support in the long run will be in direct proportion to the public good accomplished through education of practitioners, hospital care of patients and advance of medical knowledge. To this end the training of the student should involve not only diagnosis and treatment of disease but also direct acquaintance with public and private efforts to prevent disease and ameliorate its consequences. Thus contact with the social welfare work of the school hospital may well be supplemented by assignment for work with public and private health agencies. Public estimation of the value of methods of medical education will to a considerable extent be influenced by the intelligent and unselfish interest exhibited by medical graduates in public questions relating to health.

(To be Continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Douglas L. Cannon, acting state health officer, has been made a member of the state board of censors of the Medical Association of Alabama, succeeding in that capacity the late Dr. Samuel W. Welch; Dr. Frederick W. Wilkerson, Montgomery, has been appointed a member of the board to succeed Dr. James N. Baker, resigned; these appointments are subject to the approval of the state board of health which meets in April.

State Medical Meetings at Mobile, April 16-19.—The Medical Association of the State of Alabama will hold its annual meeting at the Battle House, Mobile, April 16-19, under the presidency of Dr. Edwin V. Caldwell, Huntsville, with the Mobile County Medical Society as host. The guest speakers include Dr. Louis B. Wilson, Rochester, Minn., who will deliver the Jerome Cochran lecture on "Some Suggestions for the Improved Training of the Medical Specialist." Dr. Henry J. Gerstenberger, Cleveland, Ohio, will speak on "Cineographs of Some Diseases in Infancy and Childhood; Dr. Willis C. Campbell, Memphis, Tenn., "Operative Measures in Treatment of Low Back Pain" with motion pictures; Dr. Fred W. Rankin, Rochester, Minn., "Diagnosis and Treatment of Cancer of Rectum"; Dr. Malcolm L. Harris, Chicago, President Elect of the American Medical Association, "Some Phases of Medical Economics"; Dr. Fred B. Lund, Boston, "The Surgeon and His Environment: Historical Sketch," with lantern slides; Drs. Charles A. McWilliams, Gulfport, Miss., and Edward C. Ellett and Ralph O. Rychener, Memphis, Tenn., will address the annual dinner and conference of the eye, ear, nose and throat section on "Paranasal Sinusitis in Children," "Sarcoma of the Iris," and "Gumma of the Iris," respectively. The symposium on tuberculosis will be given by Drs. Robert R. Ivey, Asheville, N. C.; Waller S. Leathers, Nashville, Tenn., and Henry Boswell, Jr., Sanatorium, Miss. In addition, scientific papers will be presented by many Alabama physicians. The Alumni Association of the Medical Department of the University of Alabama will hold a banquet, April 17, for a special discussion on medical education with reference to a four year school in Alabama. The speakers will be Drs. Gilbert F. Douglas, Birmingham, president of the alumni; Dr. Stuart Graves, dean of the medical school; Dr. Benjamin L. Wyman, Birmingham; Bradford Knapp, president of the Alabama Polytechnic Institute; Dr. Wilson, and Governor Graves of Montgomery. The public will be invited to hear these speakers. During the state medical meeting, the Alabama Hospital Association will be addressed by Dr. Malcolm T. MacEachern, Chicago. The Alabama State Association of Railroad Surgeons will hold its meeting, Tuesday evening.

CALIFORNIA

Fraternity Banquet.—Nu Sigma Nu medical fraternity will hold a banquet at the Biltmore Hotel, Los Angeles, May 4, at which the speaker will be Dr. William J. Mayo, Rochester, Minn., and the toastmaster, Dr. George Dock, Pasadena. Representatives of medical schools will be guests; tickets are $5. The meeting of the California Medical Society at Coronado, May 6, will enable many members to attend.

Bills Passed.—The house and the senate have passed senate bill 105, authorizing the board of pharmacy to issue a permit to general dealers in rural communities where there is no registered pharmacist to sell simple household remedies and drugs. Senate bill 410, creating the office of chief of narcotic law enforcement, having charge of the enforcement of all laws regulating the sale and distribution of narcotics and other dangerous drugs, has been passed by the senate.

Personal.—A bronze plaque has been erected in the corridor of the Hooper Foundation for Medical Research of the University of California in honor of the late Dr. Emanuel C. Fleischner, who served eleven years on the staff of the medical school. ——Dr. Lucy M. F. Wanzer, said to be the first woman physician in San Francisco, has been made an honorary member of the San Francisco County Medical Society.——Dr. Rudolf B. Teusler, director, St. Luke's International Hospital, Tokyo, Japan, was guest of honor at a dinner in Los Angeles, recently, which was attended also by Henry S. Pritchett, Ph.D., president, Carnegie Foundation for the Advancement of Teaching, and Dr. Mabel E. Elliott, former medical director of Near East Relief and now head of the children's department of St. Luke's Hospital. The hospital was destroyed by earthquake in 1923 and by fire in 1925; a new hospital is being constructed at a cost of several million dollars.—— Dr. Everett Morris has resigned from the staff of the U. S. Veterans' Bureau Hospital at San Fernando to become superintendent and medical director of the Wi-shi-ah Sanatorium, Auberry, Fresno County.—— Dr. Alexander Gibson has been appointed health officer of the city of Alturas and of Modoc County, and Dr. H. J. Ring, health officer of Ferndale.

COLORADO

Dinner to Doctor Work.—The Medical Society of the City and County of Denver will give a dinner at the Denver Country Club, April 13, in honor of Dr. Hubert Work, who has resided in Colorado for many years. Dr. Work was secretary of the interior in President Coolidge's cabinet. He was the first Speaker of the House of Delegates of the American Medical Association, and was President of the Association in 1921.

Society News.—Dr. Esmond R. Long, professor of pathology, University of Chicago, addressed the Clinical and Pathological Society, Denver, March 18, on "Pathologic Anatomy Before Morgagni." The following day Dr. Long addressed the Denver City and County Medical Society on "Internal Tuberculin Reactions in Tuberculosis," and those in attendance at the fourth spring clinic of the University of Colorado on "Diverse Concepts of Pathology."

CONNECTICUT

Society News.—The first Delta Omega lecture at Yale University School of Medicine was presented, March 8, by Dr. James A. Doull, Baltimore, on "Factors in the Selectivity of Diphtheria and Scarlet Fever." Delta Omega is an honorary public health society. Prof. C.-E. A. Winslow presided. ——Lafayette B. Mendel, Ph.D., Sterling professor of physiologic chemistry, Yale University, New Haven, has been made a corresponding member of the Société de Biologie of Paris. ——Nine persons in New Haven had contracted smallpox up to March 21 this year; none of them had ever been vaccinated. The disease is said to have been introduced from North Haven, where it appeared early in December.

DELAWARE

Bills Passed.—The following bills have been passed by the senate: Senate bill 30, authorizing the establishment of a mental hygiene clinic under the direction of the trustees of the state hospital for the insane, and senate bill 31, authorizing the establishment of a psychiatric observation clinic at the state hospital for the insane.

ILLINOIS

Second Annual Clinic.—St. Anthony's Hospital, Rock Island, will hold its second annual clinic, April 24-25, to which physicians are invited. The first day will be given to demonstration of "Controllable Spinal Anesthesia and Conduction Anesthesia" by Dr. George P. Pitkin, Bergenfield, N. J., and the second day to lectures and dry clinics by Drs. Géza de Takáts, Chicago, on "Injection Treatment of Varicose Veins"; Raymond W. McNealy, Chicago, "Surgery of the Peripheral Blood Vessels"; James G. Carr, Jr., Chicago, "Treatment of Heart Disorders," and Sidney H. Easton, Peoria, "Congenital Clubfoot." Luncheon will be served by the sisters to all attending guests.

Dr. Hall Appointed State Health Officer.—The governor, March 26, appointed Dr. Andy Hall of Mount Vernon director of the department of public health, succeeding Dr. Isaac D. Rawlings, resigned. Dr. Hall, who was born in Illinois and graduated in medicine from Northwestern University in 1890, has practiced in Illinois for thirty-eight years. For about four years he was health officer of his city and was formerly mayor. Dr. Hall has been a councilor of the Illinois State Medical Society for many years and has served on the medicolegal committee. He is a past president of the Jefferson County Medical Society and of the Southern Illinois Medical Society and a veteran of the Spanish-American and World wars. He has three sons who are physicians. At a meeting of the Jefferson County Medical Society, March 29, Dr. Hall resigned as secretary, and his son, Dr. Marshall Hall, was elected to succeed him.

Chicago

Society News.—Among others, Dr. Arthur Dean Bevan and Dr. Earl R. McCarthy addressed the Chicago Surgical Society, April 5, on "Tumors of the Carotid Gland," and Dr. Harry Singer on "Perforated Peptic Ulcers Presenting Mild Symptoms: So-Called Formes Frustes."——About 135 families living near North Crawford and Peterson avenues were ordered to be vaccinated by the health department when it was discovered that their milk man (who had never been vaccinated) had an advanced case of smallpox.

University News.—Dr. Francis R. Packard, Philadelphia, editor of the *Annals of Medical History*, gave an illustrated lecture on "Ambrose Pare" before the faculty and students of Northwestern University Medical School, April 5.——The University of Chicago announced, January 29, the receipt of a gift of $250,000 from an anonymous business man to establish the Charles Henry Markham Fund in honor of the chairman of the board of directors of the Illinois Central Railroad. The income from the fund will be used to support teaching, research and clinical work in the departments of medicine and surgery.

Summer Clinics.—The Chicago Medical Society has again arranged to hold a two weeks' series of clinics at Cook County Hospital, June 17-29, which will be given by members of the staff and for which a registration fee of $10 will be charged to cover the cost. The work will be confined largely to general medicine and surgery. It will start at 8 a. m. and the last clinic of the day will be held at 3 p. m.; each clinic will last an hour. Two amphitheaters will be used simultaneously, so there will be four medical and four surgical clinics daily. Further information will be given on request to the summer clinics committee, Chicago Medical Society, 185 North Wabash Avenue.

Report on Cardiac Clinics.—According to the Chicago Heart Association, seventeen heart clinics in nine Chicago dispensaries cared for 6,580 patients during 1928, of whom 2,077 were children, and 2,546 were new admissions. In 37 per cent of the 1,904 patients discharged during the year the responsibility of the clinic was considered ended; 16.3 per cent of the patients discharged were unable or unwilling to cooperate; 8.7 per cent died; 19.4 per cent were lost track of, and 18.5 per cent were turned over to private physicians or dispensaries near their homes. Of the 6,580 patients, 57 per cent were given routine "follow-up"; only 4.8 per cent of the most urgent cases were referred to the convalescent care service on account of a shortage of beds. Each of the nine dispensaries has a chief and from two to eight assistants, while all the clinics have social workers and most of them volunteer clinic aids. Fifty-three physicians work in the seventeen clinics.

IOWA

Bill Passed.—The house has passed house bill 111, limiting the liability of an employer for medical and surgical services to injured employees to $200.

KENTUCKY

Dr. Gladys Dick Gives Annual Lecture.—About 250 physicians attended the annual lecture sponsored by the Alpha Omega Alpha honorary medical fraternity in Louisville, March 15, which was delivered by Dr. Gladys Dick of the John McCormick Research Institute of Chicago on research in scarlet fever. Dr. Dick was later called to Berea to assist in the control of a scarlet fever epidemic which amounted to about 350 cases.

Clubs Sponsor Operative Clinic.—In two and a half days in March, ninety-six operations for trachoma, tonsils and adenoids are said to have been done by a representative of the state board of health on school children at Morganfield. The clinic was intended mainly for trachoma work, but, the Sturgis *News* says, tonsils and adenoids were also removed, and about 175 children were turned away because time did not permit further operating. The clinic was sponsored by the civic clubs of Union County.

Personal. — The Clarke County Medical Society recently presented a silver cup to Dr. John A. Snowden, Sr., Winchester, in recognition of his service to the profession during more than fifty years of practice.——Dr. Charles W. Reynolds has been elected president of the board of education of Covington. ——Dr. James Ernest Fox, Louisville, has taken up the duties of superintendent of the Central State Hospital at Lakeland, succeeding the late Dr. Wallis W. Durham. —— Dr. J. W. Davis, Hazard, formerly health officer of Perry County, has been appointed director of public health of Pike County.—— Dr. John P. Wyles, Cynthiana, has been appointed health officer of Harrison County. —— Dr. Charles A. Neal, Nicholasville, has been appointed health officer of Jessamine County. —— Dr. Paul R. Weeks has been appointed health officer of the city of Richmond for three years.

Great Reduction in Trachoma.—About fifteen years ago, the survey completed by Dr. John McMullen, U. S. Public Health Service, indicated that there were more than 50,000 cases of trachoma in Kentucky. Today, the state health officer, Dr. Arthur T. McCormack, estimates that there are fewer than 3,000 cases. Dr. Joseph A. Stucky of Lexington, who for years has held annual clinics in the mountain regions, believes that the improvement has come about partly by educating these people to recognize the symptoms of trachoma and by teaching them something of the value of sanitation and proper nourishment, even to showing them how to cook certain things properly. Formerly, there were counties without a single physician and in others one physician served the entire county. Now there are county health units throughout the state, it is said, as well as an excellent trachoma hospital at Richmond. One of the most remarkable changes has come about in Knott County, which was known as the "Pauper County." Formerly, it seemed that about half of the 11,000 persons here had trachoma, but the campaign against trachoma has been so thorough that in a recent survey the U. S. Public Health Service found not a single case in Knott County.

MAINE

Bill Enacted.—Senate bill 145, amending the law relating to optometry by providing for a fee of $50 for the issuance of a certificate of reciprocity, has become a law.

Bills Introduced.—Senate bill 717 creates a board of barber examiners and regulates the practice of barbering. House bill 1679 creates a board of hairdressers and cosmetologists and regulates the occupation of hairdressers and cosmetologists. House bill 1709 requires all teachers and janitors in any public school to file a certificate from a licensed physician certifying that such person is free from all infectious and communicable diseases.

MARYLAND

Bills Passed.—The senate and the house have passed senate bill 143, providing for an additional coroner for Baltimore to be known as a "coroner at large" and to have exclusive jurisdiction in all deaths resulting from automobile accidents. The senate has passed senate bill 129, allowing physicians, nurses and hospitals a lien on any judgment, settlement or compromise obtained by the patient injured in a personal injury case, but not on any money recovered under the workmen's compensation laws. The house has passed house bill 84, making hopeless insanity a ground for divorce.

Society News.—The Osler Historical Club, Baltimore, was addressed, March 26, by Dr. Thomas B. Futcher on "The Gold Headed Cane"; by Dr. Eugene J. Leopold on "Aretaeus, the Cappadocian: First Account of Diabetes," and by Dr. Jesse W. Downey, Jr., on "Dr. John Shaw," who founded the University of Maryland and was treasurer, from 1807 to 1809, of the Medical and Chirurgical Faculty of Maryland.——The Baltimore City Health Department is undertaking a campaign to eradicate diphtheria which will be in charge of Dr. John Frederick Hempel, assistant commissioner of health; free clinics have been opened throughout the city and treatment may be administered by the family physician or health department. ——The state medical society is sponsoring health talks over WBAL, Baltimore, Monday afternoons at 3:45, and from WFBR, Friday evenings at 7:45. The talk over WBAL, April 22, will be on "The Heart" by Dr. Louis P. Hamburger, and April 29, "Care of the Eyes" by Dr. Alan C. Woods, both members of the faculty of Johns Hopkins University School of Medicine. The talk over WFBR, April 19, will be on "Prevention of Drowning" by Mr. E. B. Marx of the Playground Athletic League, Baltimore, and April 26 on "Carbon Monoxide Poisoning in the Home" by Mr. H. M. Coblentz of the city health department.

MASSACHUSETTS

Bill Introduced.—House bill 1181 would authorize the city of Everett to establish and maintain a public hospital and to acquire land therefor by purchase or otherwise.

Personal.—Dr. Horace K. Richardson, formerly senior assistant physician at the Sheppard and Enoch Pratt Hospital, Towson, Md., is now with the Austen Riggs Foundation at Stockbridge.——Dr. Edwin H. Place, Boston, gave three lectures on communicable diseases in San Jose, Calif., March 12-15, under the auspices of the San Jose Hospital Association.

A Death from Anthrax.—Michael Kacuski, an employee of a kid manufacturer in Lynn, died of anthrax, March 30. A technician in the laboratory of the hospital where the patient died later became ill with anthrax. The cases of anthrax reported in this vicinity have usually been contracted by persons who handle kid imported from China or South America.

MICHIGAN

Bill Enacted.—House bill 26, amending the law prohibiting any person sick with a communicable disease from being brought into any part of Michigan without the special permit of the board of health by providing that any county may transport persons to and from county hospitals and sanatoriums without the special permit of the board of health, has become a law.

Quack Lamotte Arrested. — Edward Lamotte, Jr., who operates a "cancer institute" at Garden in Delta County, was arrested, January 24, on a charge of practicing medicine without a license by representatives of the Michigan Department of Public Safety. Lamotte is said to have diagnosed a "birthmark" as cancer, and to have agreed to remove it for $75. The Lamotte institute was founded by Edward Lamotte, Sr., who made a "paste" from herbs and roots and the business was passed on to the son.

Bills Passed.—The senate has passed the following bills: Senate bill 160, amending the law relating to the licensing and registration of physicians by providing (1) that the secretary of the Michigan State Medical Society shall submit lists of eligible physicians to the governor, from which the governor may select appointees for the board of registration; (2) for four year terms for the members of the board of registration, and (3) that all applicants must have resided in Michigan for at least one year immediately preceding the application for registration and must notify the board of their intention to apply for registration, at least one year prior to making such application; senate bill 161, creating a board of professional registration and providing that before an applicant shall be eligible to take an examination before any professional board, the applicant must present a certificate from the board of professional registration showing graduation from a high school and sixty hours of collegiate credit, and senate bill 239, amending the law relating to the practice of osteopathy (1) by requiring two years of college work before the study of osteopathy is begun and (2) by providing that the books and register of the board of examiners in osteopathy presented as evidence before proper courts of jurisdiction shall be held in such courts exclusive and prima facie in determining the scope of the osteopathic school of medicine and surgery.

MINNESOTA

Bill Introduced.—House bill 970 would amend the law relating to the practice of massage by eliminating the state board of massage examiners and vesting the power of examination and licensure in the state board of medical examiners.

Bill Enacted. — Senate bill 468 has become a law, thus amending the law relating to qualifications for examination for registered pharmacists by providing that the applicant must be a graduate of a recognized college or school of pharmacy and have had at least one year of practical experience in drug stores where physicians' prescriptions are usually compounded before being entitled to examination.

Bills Passed.—The senate has passed the following bills: Senate bill 399, creating a board of barber examiners and regulating the practice of barbering, and senate bill 624, amending the law relating to the form and contents of birth certificates by requiring the attending physician or midwife to specify "any abnormal physical condition or defect, describing the same" in addition to the information required by the present law.

Dr. Wangensteen Appointed Professor of Surgery.— The dean of the University of Minnesota School of Medicine announces that Dr. Owen H. Wangensteen has been appointed head of the department of surgery, effective in 1930, to succeed

Dr. Arthur C. Strachauer, who requested to be relieved in order to devote his time to the cancer institute at the university. Dr. Wangensteen is a native of Minnesota; in the interval he will study at Rochester and in Europe.

Health at Duluth. — Telegraphic reports to the U. S. Department of Commerce from sixty-six cities with a total population of about 30 million, for the week ending March 30, indicate that the lowest mortality rate (8.5) was for Duluth, and that the mortality rate for the group of cities as a whole was 13.3. The mortality rate for Duluth for the corresponding week last year was 10.7, and for the group of cities, 15.2. The lowest infant mortality rate for this week was also at Duluth, which reported no infant mortality. The annual mortality rate for sixty-six cities thus far this year is 18, as against a rate of 14.1 for the corresponding period of last year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers for large areas outside the city limits or that they have a large negro population may tend to increase the death rate.

Society News.—Dr. Walter C. Alvarez, Mayo Clinic, Rochester, presented motion pictures of intestinal peristalsis before the Ramsey County Medical Society, St. Paul, March 7, and spoke on "Effects of Emotions on the Digestive Tract."—— *Minnesota Medicine* has instituted a "question and answer column," with the approval of the council of the state medical association, which will be in charge of Dr. William A. O'Brien, assistant professor of pathology, University of Minnesota Medical School. —— Dr. Stanley R. Maxeiner has been elected president of the Minneapolis Surgical Society. Drs. James M. Hayes, James A. Johnson and Dr. Maxeiner addressed the society, March 3, on "Three Cases of Syphilis of the Stomach." ——The Eitel Hospital, founded in 1912 in Minneapolis, has been purchased by the Nicollet Clinic.——The Hennepin County Medical Society, Minneapolis, was addressed, April 3, by Dr. Francis R. Packard, Philadelphia, on "Life and Times of John and William Hunter," and by Louallen F. Miller, Ph.D., associate professor of physics, University of Minnesota, Minneapolis, on "Liquid Air."

MISSOURI

Bill Passed.—The house has passed house bill 660, permitting osteopaths to employ narcotics in the practice of their profession.

Bill Introduced.—Senate bill 746 amends the law relating to pharmacists by providing for the annual registration of every pharmacy, prescription laboratory or apothecary doing business in the state.

Personal. — Dr. Rudolph S. Vitt, former coroner of St. Louis, has been elected president of the Chippewa Trust Company.——The board of directors of Washington University, St. Louis, announces the appointment of George Reeves Throop, Ph.D., as chancellor of the university.——Dr. James G. Royse, formerly assistant secretary of the Missouri State Board of Health, has been appointed to a position with the U. S. Public Health Service at Chicago.——Dr. Ernest Von Quast, Kansas City, celebrated his fifty-second anniversary in the practice of medicine, March 7.——Dr. Louis C. Obrock, St. Louis, has been appointed health commissioner of St. Louis County to succeed Dr. Arthur E. Walters.——Dr. Earle H. Coon, assistant superintendent of State Hospital number 3 at Nevada, has been appointed superintendent to succeed Dr. James H. Parker.

NEBRASKA

Society News. — The Otoe County Medical Society was addressed, February 11, by Drs. John Jay Keegan and George Alexander Young, Omaha, on "Diagnostic and Therapeutic Uses of Spinal Lipiodol and Air Injections," illustrated by lantern slides; Dr. Clyde A. Roeder, Omaha, spoke on goiter operations.——The staff of the Norfolk State Hospital presented a program before the Madison Five Counties Medical Society, recently, the speakers being Drs. Edward L. Emrich, Clarence C. Drummond and George E. Charlton; their subjects pertained to mental disease.

Bills Passed.—The following bills have passed the house and the senate: Senate bill 190, regulating the importation, production, compounding, possession and distribution of narcotic drugs or their synthetic substitutes, and house bill 527, creating a state anatomic board and providing through said board for the distribution and use of certain dead human bodies for educational purposes. The senate has passed senate bill 162, providing for the acceptance of certificates of those passing the National Board of Dental Examiners in lieu of an examination before the Nebraska State Board of Dental Examiners.

NEVADA

Bills Enacted. — The following bills have become laws: Senate bill 9, providing that any county may establish a public hospital, levy a tax and issue bond therefor, and house bill 210, amending the law regulating the practice of chiropractic by providing that members of the board of chiropractic examiners shall be graduates of chiropractic schools giving a course of at least three years, of six months each, in anatomy, histology, elementary chemistry and toxicology, physiology, bacteriology, hygiene and sanitation, pathology, diagnosis or analysis, chiropractic practice and theory, obstetrics and gynecology, and symptomatology, and by further providing a schedule of minimum educational requirements to enable any person to practice chiropractic.

NEW HAMPSHIRE

Bills Passed.—House bill 386, providing for the sexual sterilization of certain inmates of state and county institutions, has been passed by the house. The house has passed the following bills: House joint resolution 11, authorizing the state board of charities and correction to engage free beds in such sanatoriums and other places as have been approved by the board for the treatment of indigent persons who have tuberculosis, and house bill 198, permitting the county commissioners of any county and three or more taxpayers to incorporate, establishing a general hospital and training school for nurses to be maintained at the expense of the county.

Survey of Mental Patients. — The first admissions of mental patients to the New Hampshire State Hospital amounted to 307 during 1927 as compared with 306 in 1922, and with 375 in 1926. The increase in the number of first admissions to this hospital between 1922 and 1926 was relatively greater than the growth in the state's population during that period. The number of mental patients under treatment has increased from 876 on Jan. 1, 1910, to 1,575 on Jan. 1, 1928, and of the latter number 753 were males and 822 females. These figures are based on a survey made by the U. S. Department of Commerce with the cooperation of the state board of charities and correction, and the figures for 1927 and 1928 are preliminary and subject to change.

NEW JERSEY

Bills Enacted.—House bill 187, making it lawful for county hospitals to contract with municipal hospitals for services such as heat, laundry and food, has become a law. Senate bill 17, amending the pharmacy law by requiring of assistant pharmacists two years of study in a school of pharmacy, has become a law.

Bills Passed.—The senate has passed the following bills: Senate bill 11, authorizing any county or one or more municipalities of school districts to enter into joint contracts for public health service; senate bill 198, empowering the department of institutions and agencies to revoke the licenses of private nursing homes, and senate bill 237, abolishing county boards of health.

Society News.—Dr. Bela Schick, New York, addressed the Atlantic County Medical Society, Atlantic City, April 12, on "Nutritional Disorders in Infancy and Their Treatment," and Dr. Joseph H. Marcus on "A Case of Congenital Lymphangiectatic Edema."——Dr. Theobald Smith, Princeton, director, department of animal pathology, Rockefeller Institute for Medical Research, gave an address on undulant fever at the third annual conference on public health at the headquarters of the American Medical Association, Chicago, March 30.

NEW YORK

Bill Enacted.—The following bill has become a law: House bill 784, amending the correction law in regard to the psychiatric clinic at Sing Sing by providing for three assistant commissioners of correction, the third assistant to be a qualified psychiatrist of not less than five years' experience.

Society News. — The Medical Society of the County of Albany was addressed, April 10, by Drs. Arthur J. Bedell on "Ocular Findings in the New-Born," and Alfred L. Madden on "So-Called Agglutinoid Atresia of the Cervix." The society, together with the state medical society, announces that the April 18 graduate lecture will be given by Dr. Robert Wallace, New York, on "Mucous Colitis—Diverticulitis."

Epidemics of Sore Throat.—One hundred and seven cases of sore throat occurred in the village of Wayland in Steuben County in February, all, the state department of health says, among persons who had consumed grade A raw milk from

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one dairy. The first four cases occurred in a dairyman's family. Investigation showed that a cow in the herd developed a swollen udder and that her milk was infected with nonhemolytic streptococci. An epidemic occurred also at Savannah in Wayne County, which, during the week of March 10, amounted to about seventy-five cases in a population of about 600. In this instance a cow in the herd received an injury to an udder, March 2, and mastitis was discovered, March 13. The milk was not excluded from the supply until after that date. Examinations made in the state laboratory indicate that hemolytic streptococci were present in the milk and in the throats of patients. In view of these epidemics and the epidemic which occurred at Lee, Mass. (THE JOURNAL, July 21, 1928, p. 179), the state department of health believes that veterinary examination of herds should be made at least monthly, or weekly bacterial examination of milk samples, or both, in order to provide a safeguard. This, however, would not be absolute. The only certain safeguard, the department says, is effective pasteurization.

New York City

Eighth Harvey Lecture.—Dr. Eugene L. Opie, director, department of pathology, University of Pennsylvania School of Medicine, Philadelphia, will deliver the eighth Harvey Society lecture at the New York Academy of Medicine, April 18, on "Pathogenesis and Transmission of Tuberculosis."

Personal.—Dr. David I. Macht, director of the pharmaceutic laboratory of Hynson, Westcott and Dunning, Baltimore, and lecturer in pharmacology at Johns Hopkins University School of Medicine, received the degree of doctor of literature, April 2, at the graduating exercises of the Yeshiva College, New York, "in recognition of his scientific investigations concerning the materia medica, pharmacology and hygiene of the ancient Hebrews."——Dr. David H. Shelling has been appointed instructor in pediatrics at the Johns Hopkins University School of Medicine, Baltimore, and assistant physician to the Harriet Lane Home for Sick Children.——Dr. Leonor Michaelis of Johns Hopkins University School of Medicine, Baltimore, has been appointed a member of the staff of the Rockefeller Institute for Medical Research.

Society News.—At a meeting of the Medical Society of the County of New York, March 25, at the New York Academy of Medicine, Dr. William Darrach, dean and professor of clinical surgery, Columbia University College of Physicians and Surgeons, spoke on "The Profession and the Medical Center"; Dr. Walter C. Klotz, director of the Cornell Clinic, "The Profession and the Cornell Pay Clinic"; Edward T. Devine, Ph.D., executive officer, "The Profession and the Bellevue-Yorkville Health Demonstration"; Dr. Eugene L. Fisk, medical director, Life Extension Institute, "The Profession and the Life Extension Institute," and Dr. Charles Gordon Heyd, "The Standpoint of the Profession."——The nineteenth lecture in the afternoon series was given at the New York Academy of Medicine, April 5, by Dr. Harlow Brooks, on "The Medical Examination."——The New York Electrical Society was addressed, April 3, by R. F. Norris, acoustic engineer, on "The Battle Against Noise."

NORTH CAROLINA

Appointments at Duke University.—The dean of Duke University Medical School, Durham, announces that Dr. Julian Deryl Hart has been appointed professor of surgery, effective in 1930, and Dr. Wiley Davis Forbus, professor of pathology. Both appointees are graduates of Johns Hopkins University School of Medicine, Baltimore, where they have been members of the faculty for several years. Dr. Hart is a native of Georgia and Dr. Forbus of Mississippi.

OHIO

Dr. Pomeroy Honored.—The Geauga County Medical Society and the Kiwanis Club of Chardon gave a banquet, February 14, in honor of Dr. Frank S. Pomeroy, who has completed fifty years of practice in that county. Dr. Pomeroy was presented with a chair and footstool and a sum of money. He has been a member of the county medical society for forty-eight years, its president and secretary and a member of many committees, and a delegate to the state association. The speakers included Dr. Carl A. Hamann, for years dean of Western Reserve University School of Medicine; Dr. Lucy S. Hertzog, J. W. Moats, Attorney H. O. Bostwick, Mr. Allyn, president of the Kiwanis Club, and the toastmaster, Dr. Walter C. Corey, Chardon.

Bills Passed.—Senate bill 222, requiring all sellers of caustic or corrosive substances as defined by Congress in its Lye Act to label such substances "poisons," and senate bill 243, amending the workmen's compensation act by providing that the term "injury" as used in the act "shall include any injury received in the course of employment, or any disability that is caused by illness or disease arising out of or with the direct results of the employment," have been passed by the senate. The house has passed house bill 83, amending the osteopathic act by requiring, in addition to the professional course of osteopathy, "a certificate from a reputable college as evaluated by the entrance examiner of the state medical board showing that the applicant has had two or more years of premedical work in said college," and by permitting osteopaths licensed to practice at the time of the passage of this act to prescribe and administer drugs other than anesthetics or antiseptics after passing an examination in materia medica and therapeutics before the osteopathic examining committee.

Society News.—Twenty-two members of the Allen County Academy of Medicine recently journeyed to Tulane University, New Orleans, for a week's tour of clinics. The academy annually sponsors these tours, and last year went to McGill University, Montreal.——The American Association of Obstetricians, Gynecologists and Abdominal Surgeons held its mid-year clinic at White Cross Hospital, Columbus, in March.——Dr. Cecil Striker, Cincinnati, addressed the Montgomery County Medical Society, Dayton, recently, on "Modern Treatment of Diabetes."——Dr. Lester W. Sontag, Yellow Springs, addressed the Greene County Medical Society, Xenia, March 7, on "Rheumatic Heart Disease."——The Academy of Medicine of Lima and Allen County was addressed recently by Dr. John Phillips, Cleveland, on "Differential Diagnosis and Treatment of Jaundice."——The Logan County Medical Society was addressed, March 1, by Dr. Hobart L. Mikesell, West Liberty, on "Effects of Artificial Sunlight on Certain Chronic Conditions."——Dr. Justin M. Waugh, Cleveland, addressed the Mahoning County Medical Society at Youngstown, recently, on "Chronic Hoarseness: What Does It Mean to an Adult?"——The Doctors' Orchestra, Akron, recently gave a concert at the Linden Hall Convalescent Hospital, Chagrin Falls.

OKLAHOMA

Bill Enacted.—Senate bill 66 has become a law, authorizing the state commissioner of health to appoint a superintendent for each county tuberculosis sanatorium.

PENNSYLVANIA

Bill Enacted.—House bill 190, providing for the immediate registration of all births and deaths, has become a law.

Bills Introduced.—House bill 1902 would establish a state narcotic farm for the confinement and treatment of persons addicted to the use of habit-forming narcotic drugs. House bill 1917 would make it unlawful for any funeral director or embalmer to pay to physicians, surgeons or hospitals any fee or reward for business procured.

Bills Passed.—The following bills have been passed by the house and the senate: Senate bill 704, amending the law relating to optometry by providing for the scope of the examination to be given to applicants; senate bill 781, allowing the department of health to furnish the list of habitual users of any drugs, filed with the department pursuant to the provisions of the narcotic act, to the department of revenue, for the purpose of properly enforcing the provisions of the laws relating to the operation of motor vehicles, and house bill 7, providing that any resident, indigent, ex-service man shall be treated by any hospital receiving financial aid from the state, the expenses of such treatment to be borne by the state.

Philadelphia

Hospital News.—The Institute for Mental Hygiene of the Pennsylvania Hospital, the cornerstone of which was laid April 5, will be run on a general hospital plan, receiving patients suffering from the psychoneuroses and difficulties of adjustment. The teaching and research work will be associated with the University of Pennsylvania School of Medicine and Jefferson Medical College.

Society News.—The Pathological Society of Philadelphia was addressed, March 14, by Frederick S. Hammett, Ph.D., on "The Thyroid and Evolution."——Dr. John H. Gibbon addressed the Philadelphia Academy of Surgery, April 1, on "Review of Operations Performed on Gallbladder and Ducts."——The Philadelphia Laryngological Society was addressed, April 2, by Dr. David Nussbaum on "Pyema Following the Anginas."——Dr. John H. Wyckoff, Jr., New York, addressed the College of Physicians of Philadelphia, April 3, on "Consideration of the

Possibility of the Prevention of Arteriosclerotic Heart Disease."——The New York and Philadelphia obstetric societies will meet in Boston, April 16, with the Boston Obstetrical Society. —— The Pathological Society of Philadelphia was addressed, April 11, by Dr. Warren H. Lewis, Baltimore, on "Some Contributions of Tissue Culture to Pathology."

RHODE ISLAND

Bills Introduced.—House bill 774 regulates the practice of barbering and creates a state barber examining board. House bill 981 would create a state department of public health, the office of state commissioner of public health and an advisory council to the department. The department shall continue in force the activities and agencies maintained by the state board of health, the state board of pharmacy, the board of examiners in chiropody, the board of examiners in osteopathy, the state board of chiropractic examiners, the examiners in midwifery, the state board of registration in dentistry, the board for the practice of cosmetic therapy and hairdressing, the board of examiners of trained nurses, the board of examiners of barbers, the board of food and drug examiners, the state board of registration and embalming, the board of examiners in optometry, the assayer of liquors, and the narcotic drug board.

TENNESSEE

Bills Passed.—House bill 329, requiring all applicants for a marriage license to submit to a physical examination, and house bill 886, establishing a state board of pharmacy and regulating the practice of pharmacy and the sale of poisons, have been passed by the house.

Bills Introduced. — Senate bill 815 requires every male person in the state who seeks a marriage license to present to the licensing official a physician's certificate that such applicant is free from venereal disease in a communicable state.

WISCONSIN

Bill Introduced.—House bill 564 amends the law relating to health work among the Indians by appropriating annually $2,000 for medical attention, public health work and the investigation and prevention of disease with special reference to the Indian population of the state.

Bill Passed.—The house has passed house bill 366, providing that the State Medical Society of Wisconsin is incorporated, the purpose of the corporation being the advancement of medical science, and that the corporation shall have only such privileges, powers, duties and limitations as shall be provided from time to time by the statutes and that the constitution and by-laws adopted by the house of delegates in 1927 shall be in force until changed as therein provided.

Society News.—The joint meeting of the Wisconsin Urological Society and the Medical Society of Milwaukee County was addressed, April 12, by Dr. Harvey G. Beck, professor of clinical medicine, University of Maryland School of Medicine, Baltimore, on "Relation of Urology to Internal Medicine," and by Dr. James C. Sargent, Milwaukee, on "Interpretation of the Seminal Vesiculogram." —— The Milwaukee Roentgen Ray Society was addressed, April 6, by Dr. Dallas B. Phemister, Chicago, on "Newer Knowledge of Pyogenic Infections of Bone," and by Dr. Fred J. Hodges, Madison, on "Roentgen Signs of Circulatory Diseases."

GENERAL

Venereal Disease Reported.—The U. S. Public Health Service states that during the preceding fiscal year, 176,502 cases of syphilis were reported by state health authorities and 143,490 cases of gonorrhea, while in the clinics under the supervision of state health agencies, 109,274 new patients were admitted. The public health service considers this a problem which is assuming greater relative importance as progress is made in decreasing the incidence of such diseases as typhoid, malaria, diphtheria and yellow fever. While the service is cooperating with the state agencies and the Committee on Research in Syphilis, it has intensified efforts to control venereal disease among its own beneficiaries. There were admitted during 1927 to U. S. Public Health Service hospitals 6,151 patients with venereal disease, representing 18.7 per cent of the total admissions.

The Government Needs Physicians and a Bacteriologist.—The U. S. Civil Service Commission announces that competitive examinations will be held to fill vacancies in various establishments of the service throughout the United States in the positions of associate and assistant medical officer, and that applications must be on file with the commission not later than June 29. Competitors will not be required to report for examination at any place but will be rated on their education and experience. The commission announces also an examination for senior bacteriologist in the food, drug and insecticide adminstration, the entrance salary of which ranges from $4,600 to $5,200 a year. The duties are to determine the antiseptic properties of disinfectants, the development of methods for conducting such examinations, and research work in connection with the application of commercial disinfectants and antiseptics. Full information may be obtained from the commission or from the U. S. Civil Service examiners at postoffices in any city.

Radio Talks on Safety. — The first of thirteen weekly Saturday evening talks, sponsored by the National Broadcasting Company in cooperation with the National Safety Council on the prevention of accidents, will be given, April 20, at 7 p. m., by Mr. Charles M. Schwab, on "Safety as a Factor in Industry." Practically all of the country will be covered by the hookup. The second lecture will be given by Robert P. Lamont, secretary of commerce, on "Safety as a National Problem," followed in succeeding weeks by James J. Davis, secretary of labor, on "Safety and the Worker"; Madame Schumann-Heink, "Safety in the Home"; Miller McClintock of Harvard University, "Making Our Highways Safe"; Grover Whelan, commissioner of police of New York, "Enforcement as an Aid to Safety," and Joseph E. Sheedy, vice president of the United States lines, "Safety on the High Seas." The other speakers have not been announced. This is an effort to awaken the people from an attitude of seeming indifference to accidents of all kinds which now claim nearly 100,000 lives a year.

Research on Deafness.—The American Otological Society announces a campaign to raise $500,000 before July 1 to continue the program of research started four years ago with funds from the Carnegie Corporation. Eventually, a fund of $2,500,000 will be sought to carry out a world-wide plan of research on deafness. At a dinner, March 12, at the New York Academy of Medicine, the trustees of the research fund received a report on the work that has been started. The committee now has in process of publication an abstract of all the literature on chronic progressive deafness, and this volume will be available shortly. The development of the bony capsule of the internal ear is being studied at Northwestern University by Professor Bast. Professor Wittmaack of Hamburg, Germany, is attempting to produce otosclerosis experimentally in apes. Drs. Aub and Crockett have studied cases of otosclerosis in all stages at the Massachusetts General Hospital by treatment with parathyroid extract and a balanced calcium diet, and this experiment will be repeated at the Montreal General Hospital. Bone changes in animals on a calcium diet are being studied at the Hooper Foundation of the University of California. Professor Davenport of the Carnegie Institution of Washington has studied the genetics of otosclerosis in a small number of families, and eventually a card index of every family affected in the country will be completed. The committee has canvassed about 2,000 hospitals for necropsy material in cases in which functional hearing tests were made before death, and 157 hospitals are cooperating in furnishing such material. Professor Sandor of Budapest has arranged to send anatomic material directly to the committee and an alliance has been made with the Johns Hopkins Hospital laboratories whereby such material in the East will be prepared for study. To continue these activities, a permanent fund to pay laboratory workers is necessary, and if sufficient money is subscribed many other problems in otology will be undertaken. Dr. Arthur B. Duel, chairman of the board of trustees of the research fund, who announced the campaign, said that Edward S. Harkness had pledged $100,000, provided the remainder of the $500,000 is raised by July 1. A central bureau of research has been established at the New York Academy of Medicine under the supervision of a committee of which Dr. Norval H. Pierce, Chicago, is chairman.

Delegates to International Meetings.—President Hoover has appointed Surg. John S. Boggess, U. S. Public Health Service, and Prof. Earl D. Myers, University of Chicago, as delegates to the fifth English-Speaking Conference on Maternity and Child Welfare to be held in London, July 2-4, under the auspices of the National Association for the Prevention of Infant Mortality, Carnegie House, 117 Piccadilly, London. The state department announces that Capt. Richard A. Warner, medical corps, U. S. Navy, has been designated a delegate to the fourth Pan American Conference on Hygiene, Microbiology and Pathology and to the second Pan American Conference on Tuberculosis, which will be held in Rio de Janeiro, June 30.

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Bequests and Donations.—The following bequests and donations have recently been announced:

Memorial Hospital Norwalk, Ohio, $17,000 for a maternity department from Mr. and Mrs. C. A. Paol.

Stouder Memorial Hospital, Troy, Ohio, $340,000 by the will of A. G. Stouder.

Sarnia General Hospital, Sarnia, Ont., $10,000 from Mrs. W. J. Hanna.

New York Skin and Cancer Hospital and the United Hospital Fund, New York, will be two of eleven residuary legatees ultimately to receive the $726,529 estate of the late Robert Jaffray.

Wesley Memorial Hospital, Chicago, $5,000 from William Smith to endow a room in memory of his wife.

Evanston Hospital Association, Visiting Nurse Association of Chicago, United Charities of Chicago, Old People's Home of Chicago, with three other organizations, to receive equal parts of half of the estate of the late James A. Patten of Evanston on the death of his widow.

Home for the Blind, Brooklyn, $5,000 by the will of the late Dr. Thomas F. Smallman, Brooklyn.

North Carolina Orthopedic Hospital for Crippled Children, Gastonia, $25,000, and Watts' Hospital, Durham, N. C., $20,000 by the will of the late Benjamin Duke, who also made many other bequests to churches and educational and charitable institutions.

Mount Sinai Hospital, New York, $2,000 by the will of the late Carl Ulman.

Leo N. Levi Hospital, Hot Springs, Ark., $25,000 by the will of Samuel Braumstein, Atlantic City, N. J.

Henry Street Settlement, New York, $50,000 for the care of children with incurable heart disease by an anonymous man and wife as a remembrance of their fifty years of married life.

Lebanon Hospital, New York Eye and Ear Infirmary, New York Skin and Cancer Hospital, Lying-In Hospital, Hospital for Joint Diseases, all of New York, the residuary estate of the late Samuel Zucker, estimated at about $200,000.

Kensington Dispensary for the Treatment of Tuberculosis, Philadelphia, $5,000, and the Shriners Hospital for Crippled Children, Philadelphia, $10,000 by the will of Louis Huger.

Children's Hospital, Boston, $150,000 by Mr. and Mrs. Louis F. Stanton Bader of Dover, Mass., toward the building fund.

Leonard Wood Memorial for the Eradication of Leprosy, $100,000 from Ellis L. Phillips, Long Island.

Massie Memorial Hospital, Paris, Ky., $1,000 from Dr. William Barclay Stephens, Alameda, Calif., as a memorial to be used in equipping a physical therapy room.

Major Memorial Hospital, Shelbyville, Ind., $30,000 by the will of the late James A. Hall.

Knox County General Hospital, Rockland, Maine, $50,000 for a nurses' home from Edward W. Bok.

Bryn Mawr Hospital, Bryn Mawr, Pa., about $850,000 by the will of the late Herbert Lloyd.

St. Vincent's Charity Hospital, Cleveland, $5,000 by the will of the late Dr. Frank E. Bunts, who had been a member of its staff for nearly forty years.

Shriners' Hospital for Crippled Children, Portland, Ore., about $75,000 by the will of the late Mrs. Lillie Norris Cordray.

Ohio Valley General Hospital, Wheeling, W. Va., $20,000 from Mr. and Mrs. S. S. Bloch for the pediatric department.

Home for Incurables, New York, about $1,000,000, and Mills Memorial Hospital, San Mateo, Calif., $200,000 by the will of the late Ogden Mills of Poughkeepsie.

Babies' Hospital, Hospital and Home for Crippled Children, Hospital of St. Barnabas, Newark Eye and Ear Infirmary, each $50,000, Hebrew Maternity Aid Society of Newark, $25,000, Beth Israel Hospital, $5,000, all of Newark, N. J., by the will of the late Felix Fuld, a merchant of that city.

The will of the late Albert W. Longley created a $600,000 trust fund, the income from which on the death of certain relatives will go to nine Chicago institutions; among them are the Augustana Hospital, the Alexian Brothers Hospital, the Home for Destitute Crippled Children and the Salvation Army.

New York Hospital has been given title to two office buildings in New York which have a market value estimated at about $2,000,000. The gift was made by Mr. J. P. Morgan.

Presbyterian Hospital, New York, $50,000 for the maintenance of the Squier Urologic Clinic; St. Mark's Hospital, New York Post-Graduate Medical School and Hospital, Mothers and Babies Hospital, Manhattan Eye, Ear and Throat Hospital, Home for the Incurables, Knickerbocker Hospital, Flower Hospital, Herman Knapp Eye Memorial Hospital, St. Vincent's Hospital, New York Skin and Cancer Hospital, New York Throat, Nose and Lung Hospital, New York Society for the Relief of the Ruptured and Crippled and Caledonian Hospital, all of New York, each $10,000, and St. Luke's Hospital, $5,000, by the will of the late William Crawford, a retired dry goods merchant. In addition, the deceased bequeathed his residuary estate, both real and personal of every nature and kind, in equal shares to the Presbyterian Hospital, Roosevelt Hospital, St. Luke's Hospital and New York Hospital. The estate is estimated at more than $6,000,000.

Montefiore and Mount Sinai hospitals, each $100,000, and Beth Israel Hospital, $25,000 by the will of the late Alexander Herman.

New England Deaconess Hospital, Boston, $1,000 by the will of the late Georgette D. Libby, Portland, Maine.

Visiting Nurse Society of Philadelphia, $40,000 in trust to support a nurse in perpetuity and the Northern Home for Friendless Children about $37,000 by the will of the late Mrs. Fannie E. Mitchell. These bequests become operative on the death of a niece and are memorials to Mrs. Mitchell's husband.

Mercy Hospital, Philadelphia, $12,000 from Eugene T. Taylor.

New York Post-Graduate Medical School and Hospital, $5,000 by the will of the late Arabella Mayer Boissevain, New York, to endow the bed which has been maintained by her in the orthopedic ward of the hospital for thirty years in memory of her sister.

Mount Sinai Hospital, New York, $7,500, the Home for Aged and Infirm Hebrews, $25,000, and after the death of the widow $750,000, Convalescent Home for Crippled Children, New York, $50,000 on the death of the widow by the will of the late Solomon Friedman.

Reconstruction Hospital, New York, $50,000 by the will of the late Dr. William Gilman Thompson.

Women's Homeopathic Hospital, Philadelphia, $2,000 by the will of the late William A. Brown of that city.

Union Memorial Hospital, Baltimore, $25,000 from Mrs. G. Clem Goodrich as a memorial to his wife.

Government Services

U. S. Public Health Service

Asst. Surg. Gen. Rupert Blue was relieved from duty at Washington, D. C., and sailed for Paris, France, about January 12 to assume supervision of all service activities in Europe.——Acting Asst. Surg. Judd Hammond was relieved from duty at the marine hospital, Chicago, Dec. 27, 1928, and ordered to duty with the U. S. Coast Guard at New London, Conn.——Acting Asst. Surg. Tom V. Willis has been directed to return from Buffalo to Pittsburgh for duty with the bureau of mines.——Surg. Herbert M. Manning has been relieved from duty at quarantine station, Marcus Hook, Pa., and assigned to the Ellis Island, New York, immigration station.——Acting Asst. Surg. Grover C. Sherrard has been relieved from duty at Rosebank, N. Y., and assigned to the quarantine station at San Pedro, Calif.——Acting Asst. Surg. Roy R. Jones has been relieved from Johnstown, Pa., and assigned to Niagara Falls, N. Y., in connection with field investigations of industrial hygiene.——Surg. George A. Wheeler was directed, January 12, to proceed from Milledgeville, Ga., to Washington for a conference in connection with field investigations of nutrition. ——Drs. Lucius F. Badger, Jr., Albert E. Russell and Alfred J. Aselmeyer have been promoted and commissioned in the grade of passed assistant surgeon in the regular corps.——Acting Asst. Surg. Harold Lyman has been assigned for duty at the marine hospital, Port Townsend, Wash.——Acting Asst. Surg. Bradley D. Hodgkins has been assigned for duty at the marine hospital, Baltimore.——Acting Asst. Surg. Henry H. Duke has been relieved from duty at San Francisco and assigned to duty with the U. S. Coast Guard, Washington, D. C.——Passed Asst. Surg. Floyd C. Turner has been assigned for duty at the U. S. Marine Hospital, Stapleton, N. Y.——Surg. (R) Stephen A. DeMartini has been relieved from duty at Port Townsend, Wash., and assigned to duty at the U. S. Marine Hospital, Boston.——Senior Surg. Leslie L. Lumsden has been directed to proceed to Greece as a member of an international committee to make a sanitary survey of that country.——Surg. John W. Kerr has been relieved from duty at Washington and assigned to duy at the quarantine station, Fort Monroe, as officer-in-charge.——Surg. Herman E. Hasseltine has been relieved from the Fort Monroe Quarantine Station and assigned to the Hygiene Laboratory, Washington, D. C. ——Asst. Surg. (R.) John W. Myers has been assigned to duty at the marine hospital, Savannah, Ga.——Acting Asst. Surg. O. V. N. Linhardt has been relieved from Quarantine Station, Baltimore, and assigned to duty at Quarantine Station, Mullet Key, Tampa Bay, Fla.

Examination to Fill Vacancies in Army

Surgeon General Ireland announces that an examination for candidates for admission to the medical corps of the army will be held, July 12-16, at military stations throughout the country. There are sixty vacancies in the medical corps. Candidates who successfully complete the examination will probably be commissioned without delay. They must be male citizens of the United States between 23 and 32 years of age, and graduates of acceptable medical schools, with one year's internship subsequent to graduation or the equivalent in practical professional experience. They must pass a rigid physical examination, and a written examination on anatomy, physiology and pathology, materia medica and therapeutics, surgery, practice of medicine and obstetrics and gynecology. The examining board will consider the candidate's general fitness for military service. Licentiates of the National Board of Medical Examiners are exempt from the professional examination. The duties of medical officer of the army should appeal to many young physicians. They are largely professional, although in addition there are duties of a military and administrative character. Medical officers are usually first sent to the Army Medical School for a graduate course and on completion of this to the Medical Field Service School at Carlisle Barracks, Pennsylvania, for field instruction; from time to time officers showing special aptitude are given training at leading medical schools and clinics at government expense. One of the most attractive features is the provision by law by which an officer, at the age of 64, or if physically disabled, is permitted to retire on three fourths of his pay. Further details will be given on request to the surgeon general of the army, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 16, 1929.

Plague Bacilli in Bombs?

In view of Sir Berkeley Moynihan's assertion (THE JOURNAL, April 6) that the Germans dropped plague bacilli in bombs on the British Army in France, a statement has been made to the *Daily Telegraph* by Colonel Stevenson Lyle Cummins, who succeeded Sir William Leishman as adviser in pathology to the British armies in France in April, 1918. He says: "So far as I am concerned, you may state quite definitely that as adviser in pathology at headquarters in France, no such thing ever came to my knowledge. Nor do I think it at all likely to have happened, owing to the risk it would have involved to the Germans themselves through infected rats leaving our trenches and going to theirs. Although I have a very great respect and regard for Sir Berkeley Moynihan I think he was entirely wrong. Nothing of the kind was reported by my friend and chief, Sir William Leishman, when he was handing over. The possibility of sending bacilli in high explosive shells and expecting them to remain effective after the heat of an explosion seems to me very unlikely." The *Daily Telegraph* military correspondent says of the quotation from the "Official History of the War" on which Sir Berkeley Moynihan relies: "This casually mentions, without endorsement or emphasis, that a D.M.S. passed on a report from a mobile laboratory that bacilli 'resembling' plague bacilli had been found. In view of the way that subordinate medical officers had for two years been urged to look out for and report anything suspicious, one wonders from a knowledge of human nature that such reports were not more frequent. That they were not is a high tribute to the scientific conscience of the medical profession, despite the ardent and feverish atmosphere of war time. From the absence of further reference to the matter it would not appear that this isolated 'discovery' was regarded very seriously. If it had been substantiated, a menace of such importance would have been brought to the notice of general headquarters and the military side."

Fatality Due to Motorist's Defective Eyesight

At the North London police court a coal salesman was summoned for negligently driving a motor car. The facts were not in dispute. The defendant drove his car between a motor omnibus which was slowing down and a tramcar, which was stationary, at the rate of from 15 to 20 miles an hour, and, not seeing that a woman had left the tramcar, did not slacken his pace. She was knocked down and so seriously injured that she died within two hours. The prosecuting lawyer said that no culpable negligence was suggested, nor was there any reason to suppose that the defendant was drunk or driving too fast. He, however, had defective eyesight, but was not fully aware of the fact until after this unfortunate woman had been killed. The defendant's lawyer told the magistrate that since the accident the defendant had been examined by an ophthalmologist, whose certificate showed that in artificial light he was unable to appreciate whether an object was moving or stationary. The magistrate said that the legislature had not put any restriction on the granting of a license to drive motor cars, but it did not absolve persons who suffered from physical defects from the consequences which might arise. He took into account the facts that the defendant was driving, as he believed, carefully, and that he had suffered a good deal of mental anguish since, but this case must be made a warning to those suffering from defective eyesight not to drive motor cars. The defendant would be fined $50, with $25 costs, and he would be disqualified from holding a license for ten years.

Hospitals for All

Lord Dawson of Penn sees the time soon coming when no really sick person can afford to be without hospital treatment. It was a suggestive theory which he developed in the course of a speech to the house of lords in the local government bill debate. That measure gives county councils power to run hospitals. He was concerned to insure that in so doing they should have the competent help of physicians experienced in such work. Only in hospitals, he argued, could all the forms of expert treatment now devoted to the cure of disease be obtained. Scientific knowledge costs money and only in hospitals shall we be able to afford the services of the several necessary scientists. He said the hospital used to be a place for the sick poor. Now we are all poor, and sometimes sick. He added: "Take a cough, a disease of the chest which some time ago was thought to require only a stethoscope and a bottle of medicine. Today it requires not only the physician, but also the radiologist and the bacteriologist."

Decreasing Emigration

It is recorded in the *Board of Trade Journal* that the number of persons of British nationality who left the United Kingdom in 1928 as passengers to places outside Europe and not within the Mediterranean Sea exceeded the number who arrived as passengers from those countries by 82,830. The following table shows the outward balances since 1924:

Year	To British Empire	To Foreign Countries	Total
1924.....	85,287	3,124	88,411
1925.....	67,877	19,179	87,056
1926.....	100,125	23,204	123,329
1927.....	85,065	18,538	103,603
1928.....	66,456	16,374	82,830

The fall of about 20,800 in the balance of British passengers outward in 1928, as compared with the figures for 1927, followed a fall of nearly 20,000 in the figures for 1927 as compared with 1926. The outward balance in 1928 is the lowest recorded in any year since the establishment in 1923 of the present series of statistics relating to Great Britain and Northern Ireland. The decrease, as compared with 1927, is mainly accounted for by the decreased net movement to Australia, New Zealand and the United States. The balances outward in 1928 to the places within the empire showed decreases of 12,557 in the number of British subjects to Australia, of 2,972 to New Zealand, and of 1,247 to British South Africa. Small decreases were also recorded for India and for the group designated "other parts of the British Empire." The net movement to British North America showed a decrease of 841. Of the 8,449 persons recruited for harvest work in Canada, 6,414 were reported to have returned up to January 19 of this year. The net outward movement of British subjects to the United States was smaller in 1928 than in 1927 by 3,355, and there was an increase in the net movement to "other foreign countries" of 1,191.

Architecture and Health

Mr. Leonard Hill, the well known physiologist, addressing the Royal Institute of British Architects on "Some Principles of Ventilation and Heating," said that the prime motive of architects should be to design buildings which afforded health and happiness to the inmates, not to secure approbation for the outside effect of the building. He cited as an example the London County Council Hall, commendable for its pictorial effect, in which there were long, narrow offices, in the back parts of which workers were removed from proximity to daylight and the view of the Thames, a just cause for criticism. The debating chamber of the council, too, proved very bad for audition, most deficient in that very quality which it should have possessed. As the best conditions for health could be

secured by living in open-air shelters, what justification was there in country places for the enforcement of building by-laws with insistence on such requirements as concrete foundations and damp-courses? There was much to be said for light buildings, such as Japanese houses, which frequently could be renewed. Clean water and air and a proper method of disposal of sewage and refuse were essential, and a garden was of high value. Why, then, should a man who had housed his family on a plot of ground by his own efforts have his home demolished by order of a council? People secured good health in caravan dwellings and little bungalows, and, while attacking the defacement of the natural beauty of the country by mean buildings, we must bear in mind that the most wonderful piece of architecture, the child's body, was made sound through a large measure of open-air life. While damp, dark habitations must be condemned, we must remember that a modern house which satisfied every by-law, if left shut up and overheated, might do much harm to children confined within it, while a shedlike dwelling, from which children escaped to play in the open air, might afford good health. A wise and elastic control by health officers should take the place of obsolete by-laws.

Colonel Rutherford Restored to the Medical Register

Col. Cecil Norman Rutherford, who was recently released from the Broadmoor Criminal Lunatic Asylum, has had his name restored to the medical register by the general medical council. The decision was reached at a meeting of the council. The printed register for 1929 has been prepared, and consequently Colonel Rutherford's name cannot be included in it, but it will appear in the 1930 issue. Colonel Rutherford's name was never struck off the register in the accepted sense. But at intervals the general medical council sends printed slips for persons on the register to fill up and return. Colonel Rutherford, while he was at Broadmoor, had no opportunity of doing this, and consequently his name came out of the register. It was more a case of lapsing from the register than of being struck off. The fact that Colonel Rutherford was adjudged insane did not affect his right to be on the register. The council has no power to remove his name on that ground. Colonel Rutherford was found guilty but insane in 1919, when tried at the Old Bailey for the murder of Major Miles Seton of the Australian forces. The trouble arose in connection with his wife. It is stated that he is at present living in Canada.

Sterilization of the Unfit

Mr. Chamberlain, minister of health, in a written reply in the house of commons, stated that he cannot yet indicate the intentions of the government regarding a request by physicians and eugenists for an inquiry into the best method of dealing with mental deficiency, including a special inquiry into the possibility and advisability of legalizing sterilization in certain cases.

Leprosy in the Empire

The report for 1928 of the British Empire Leprosy Relief Association records much important work all over the British empire. Cautious estimates give the number of lepers therein as 416,000, but the leading authority in India, Dr. Muir of the Calcutta School of Tropical Medicine, states that careful but limited survey shows in that country alone between half a million and a million lepers. The disease is rife in the African colonies and in many other parts of the empire, and in England there are as many as fifty lepers. The association provides workers in the field with the latest treatments. Sir Leonard Rogers, the medical secretary and a great authority on the disease, notes the continued success of sodium hydnocarpate injections. During the year half a million doses were sent out by the association. The treatment centers given help are frequently in missionary hands and have the warm approval of medical officers in the colonies. These achievements are exclusive of the important work done by the Indian council by means of a fund raised in India. A valuable feature of the work is the systematic training of physicians in the diagnosis of leprosy. The association also supplies them with the latest information on leprosy and its treatment. It sends out seeds of the trees from which the oils used in treatment are obtained, and these have been successfully cultivated in various parts of the empire. The report finally expresses the conviction that if the plans advocated by the association (which are in operation in many parts of the empire) can be pushed forward with determination "there is a possibility of seeing the last of leprosy, at least in many parts of the empire, within the next thirty years or so."

PARIS

(From Our Regular Correspondent)

March 6, 1929.

The Use of Radium in Metrorrhagia and Menorrhagia

In addition to the ordinary uses of radium in cancer and fibroma of the uterus, MM. P. Degrais and Anselme Bellot, in a recent article, have pointed out the advantages that radium has in the treatment of certain cases of metrorrhagia and menorrhagia. The results that they record are remarkable. They confine its use to the cases in which uterine congestion is independent of the general condition; that is to say, of the condition of the liver, the lungs and the kidneys. Inflammatory lesions of the adnexa constitute a contraindication, as do postpartum or postabortum processes. A special technic is required in using radium in fibroma and cancer. They treat the hemorrhages associated with an anatomic alteration of the mucosa, especially if changes of the uterine muscle, such as sclerosis, which is an intermediary condition to true fibromatosis, exist at the same time. These conditions may be improved by various medicinal agents but not ordinarily in a definitive manner. They are observed frequently on the approach of the menopause. They are usually the result of old local infections, supposed, in some cases, to have been long since cured. Curettage does not always have decisive effects if sclerosis has already become established. Degrais and Bellot introduce into the uterine cavity (if need be, after previous mechanical dilation) a bougie carrying a long slender tube containing radium, which they leave in situ for twenty-four hours. Two, three or four applications are given, depending on the gravity of the condition, separated by intervals of eight hours. This technic is preferable to a single, more powerful application. Rest is not compulsory during the treatment, which is not usually painful, the patients not being obliged to interrupt their ordinary employments. The hemorrhages often cease immediately; sometimes one observes a progressive and regular diminution. No uterine atrophy results, and the menses soon normally reappear, except in women who are approaching the menopause. It may enable pregnancy to occur, especially in women under 35 years of age.

Contractions of the Spleen Followed by Polyglobulism

Interesting researches have been undertaken of late to supplement the knowledge of the physiology of the spleen. MM. Benhamou, Jude, Marchioni, Vouchy and Lowitz have been devoting themselves to the problem, and the results of their researches constituted the basis of a discussion recently held before the Société de biologie. They studied, on the one hand, the changes in the volume of the spleen under various circumstances, by means of a series of roentgenographic films, and, at the same time, they took repeated blood counts of the subject examined. They succeeded in establishing that every contraction of the spleen, by whatever influence it is caused, is followed soon by a polyglobulism, which is evidently the result of a sudden expulsion of corpuscles from the spleen. This movement of blood corpuscles is never observed in subjects

from which the spleen has been removed by splenectomy, for any reason whatever. However, these contractions of the spleen followed by polyglobulism have been observed after the injection of epinephrine; after a sustained muscular effort, and even after sudden emotions, such as fear. This polyglobulism is unleashed suddenly but increases gradually, reaching its maximum in from fifteen to twenty minutes following the splenic contraction. The contraction itself, although beginning immediately, reaches its maximum in from twenty to thirty minutes after the provocative excitation. A compensatory decompression is noted in from forty to fifty minutes. When the spleen has become inert, no further modification of the corpuscles is observed. The fact that enlivened emotions may produce here the same effects as an injection of epinephrine is especially interesting, for it confirms the theory that emotion is associated physiologically with hyperepinephrinemia, which explains the various vasomotor phenomena observed in this connection.

The Right of Privileged Communication of Physicians

Discussion on the physician's right of privileged communication continues. M. Justin Godart's proposed modifications of the law (as set forth in a previous letter), which would limit, to a certain extent, the physician's right to privileged communication, were followed by a protest by the Academy of Medicine, which, after a communication by Professor Balthazard in the name of a commission appointed to study this question, passed unanimously the following resolution, which corresponds to the opinions already expressed by the medical "syndicates":

> The Academy of Medicine, after studying anew the question of the physician's right to privileged communication in connection with social laws, has drafted and hereby publishes the following resolution: The physician's right to privileged communication should be respected in connection with the operation of social laws, and, in particular, in connection with social insurance, for well organized medical technical control is better adapted to suppress abuses than the useless communication of the diagnosis of diseases to an administrative personnel.

Vaccination Against Diphtheria in the Schools of Paris

The increasing gravity of epidemics of diphtheria has induced the management of the Paris city schools to make an energetic effort to apply effective prophylactic measures. Ramon's anatoxin, after careful investigation, has been recognized as efficacious and devoid of dangerous reactions, such as are produced at times by the serum of Behring and Roux. Vaccination with the Ramon anatoxin, which had been used sporadically since 1924, was first developed systematically during the fore part of the academic year 1928-1929, with the aid of the appropriation granted by the municipal council of Paris and the general council of the Seine. From October 20 to Dec. 22, 1928, 179 vaccination days were held in Paris and 180 in the suburbs. On those occasions, 50,154 vaccinations were performed. In a great many schools, more than three fourths of the pupils submitted to vaccination. A rigorous supervision of the results of the vaccinations was enforced. Not a single grave incident was reported, which shows the high degree of reliability of the treatment. The publicity thus attained and the force of example induced many parents to have their children vaccinated by the family physician, so that it may be said that the method was widely promoted by these vaccination days. At present, as is the case every year, there are many cases of diphtheria in Paris; but no case has developed as yet among those vaccinated. The complete statistics for the whole population will not be available until the end of the season.

The Social Condition of Ex-Service Men Who Have Undergone Trephination

At the close of the war, a philanthropic law was passed that provided for the reservation in all public administrations and in large private enterprises (railways, postal service, and the like) of a certain number of openings for men injured in the war. One purpose of the law was to prevent these injured men, when they were still capable of working at a gainful occupation, from considering themselves justified in ending their days in idleness and in loading a heavy burden of pensions on the national budget. In fact, that is the aim that has been pursued by the various associations of veterans of the World War, which are today very strong, since their leaders have been so skilful as to make important political factors of them. The depreciation of the franc has lowered the actual value of the pensions that were originally accorded to the war injured, and in spite of the several increases that have been granted, many pensioners are not satisfied unless they receive enough to live on. A recent move has been made by ex-service men who underwent trephination. Many of them are subject to mental disorders that render their utilization very difficult, and even dangerous in the positions that were reserved for them in accordance with the law mentioned. Their cause presented, therefore, a reasonable defense. As a result of a petition from their association, addressed to the chamber of deputies, they have obtained a considerable increase in their pensions, which will relieve them of the necessity of accepting positions that involve a higher degree of responsibility than their mental condition warrants. Their claims are just; but it is to be hoped that their success will not mark the beginning of a general offensive movement, on the part of pensioners, against the general budget.

NETHERLANDS

(From Our Regular Correspondent)

Feb. 7, 1929.

Encephalitis Following Smallpox Vaccination

Mention has already been made of cases of encephalitis following smallpox vaccination and of the controversies that have arisen as the result of the publication of such cases. The permanent committee of the International Bureau of Public Health presented recently an interesting communication on the subject of postvaccinal encephalitis. For the first six months of 1928, the proportion of one case for each 2,800 vaccinations remains the same as for 1927. For a period of five weeks, a vaccine lymph from a country in which no case of postvaccinal encephalitis had been reported was used. A case occurred, however, in the Netherlands, in spite of the small number of vaccinations. The condition is definitely regarded as having no connection with epidemic encephalitis. The histologic lesions are typical and exactly like the lesions of encephalitis that follow smallpox, chickenpox and measles. The opinion is generally held that the postvaccinal accidents do not occur other than in the countries in which the vaccination performed on admission to the common schools is the first that the children are subjected to. A careful inquiry should be made to discover whether there have been cases other than in England and the Netherlands, in which vaccination in infancy is not compulsory (Belgium, Scandinavian countries). Are there not unobserved cases among those vaccinated during the first year of life? Do the vaccination of the parents and the immunity of the children that may result therefrom exert any influence in the matter? It may be noted that the local vaccinal reaction has no peculiar character in the children who develop encephalitis.

The Contagious Disease of the Insulinde

For more than a year, medical journals of the Netherlands, and likewise of the Dutch East Indies, have been filled with discussions in regard to a peculiar contagious disease that broke out on the *Insulinde*. The *Insulinde* is a steamer belonging to the Netherlands-Dutch East Indies service. During a return voyage, several cases of a peculiar contagious disease developed on board the steamer, which the ship's physicians were unable to diagnose with certainty. Further cases developed; complaints arose, and much discussion and controversy grew out of the incident. A commission was appointed to investigate the matter, and reached the conclusion that an epidemic of scarlet fever was involved. Other experts, however, denied the truth of this

finding, and the dispute continued. Whether it was scarlet fever, diphtheria or something else, no one knows. The *Geneeskundig Tydschrift voor Nederlandsch-Indië* has just published a complete issue devoted to the question, giving all the documentary evidence that has been published in regard to the incident.

An interesting fact pointed out, which appears to be the beginning of the end of this incident, is that for a year and a half the disease of the *Insulinde* had been observed on several boats of the same company, as well as at Java, and that the disease was characterized by septic sore throat, associated with symptoms comparable to those of scarlet fever.

The Course of Training for Women Nurses

The management of Nosokomos reorganized, at its last general assembly, the course of training of its women nurses. Because of general considerations and for fundamental reasons, it is necessary that the training of nurses shall be given in professional schools under independent management. There the pupils receive their preparatory instruction, which enables them to profit later by their instruction in the hospitals and in the psychopathic institutions. A single diploma bearing on all subjects (Red Cross, obstetrics and mental diseases) is given. The complete course of instruction comprises four years and a half, three years of which is spent in the hospitals. The plan of instruction comprises three parts: (1) preparatory instruction for a period of six months; (2) instruction proper, bearing on the care to be given in general diseases, including gynecologic conditions; and (3) special instruction, including the study of social hygiene and the crusade against tuberculosis. The pupils must be at least 20 years old. The course includes anatomy, physiology, hygiene, pathology, therapeutics, dressings, study of regimens, and psychology. For the practical training, a pupil must remain six months in each of the various services: surgery, medicine, infectious diseases, maternity, pediatrics, and two months in the gynecologic department. In addition, there is the study of certain forms of mental disease, study of the laws pertaining thereto, and the care to be given in such diseases.

Syphilis in the Army

In 1887, the incidence of primary syphilis in the army of the Netherlands was 14.3 per thousand. During the period from 1910 to 1925, a notable decrease was observed. In 1910, it was 2.8 per thousand; in 1919, 5.4, and in the period from 1921 to 1925, 2.6, 0.7, 1.0, 0.4, 0.3, respectively. In the Dutch East Indies, the figures are much higher. In 1903, the proportion was 14.3 per thousand; in 1920, 37.0 per thousand, and the figures for the period 1921 to 1925 were 31.7, 26.8, 18.6, 14.4 and 16.2, respectively.

Pharmaceutic Preparations

The directors of the Nederlandsche Maatschappy tot Bevordering der Geneeskunde and of the Nederlandsche Maatschappy ter Bevordering der Pharmacie have become alarmed at seeing the great increase in the number of pharmaceutic preparations on the market. The manufacturers address their appeals directly to the public, without the intervention of a physician. This is regrettable and with a view to discovering the means of remedying the situation, a committee was appointed to study the question. It has made a report, which submits the following seven points for consideration: 1. Every new medicament should be accorded a patent, the same as an invention. 2. Every new medicament should have a trademark, as soon as a patent has been granted. 3. No special name should be given to medicaments that are not patented. 4. Mixtures of drugs should not be placed on the market unless the composition of the product and directions for its use are stated on the label or otherwise made plain. 5. It should be specified that medicaments or combinations of medicaments shall not be dispensed except on a medical prescription. 6. The placing on the market of charlatan medicaments is prohibited; also the keeping of a stock of such medicaments for sale. 7. Products sold for the purpose of effecting an abortion may be dispensed only on a medical prescription. The possession of a stock of products of this nature destined for sale by other persons than those declared competent by the law should be suppressed.

MADRID

(From Our Regular Correspondent)

Feb. 23, 1929.

Operation for Cataract in India

Dr. F. Payales, head of the department of ophthalmology at the San José and Santa Adela Hospital, Madrid, recently gave a lecture on his trip to India. While there Dr. Holland, head of the Scientific English Mission in Baluchistan, invited him to perform the extraction of cataract by Barraquer's method at his hospital in Shikarpur. Sixteen years ago, Dr. Holland, backed by the Indian philanthropist Seth Hiranad, constructed a building with two waiting rooms and two operating rooms, in which he has performed more than 16,000 operations for cataract on the natives. More than fifty operations are performed every day. Some of the patients come from a distance. When they arrive, the police have to intervene in the arguments as to their turns for consultations on the next day. Dr. Holland is hailed in an enthusiastic and unusual form: The patients kneel and kiss his feet, saying "health." He has three interpreters for consultations. About 80 per cent of the patients have cataracts, 15 per cent glaucoma and 5 per cent other diseases. The natives wait for their turns in the waiting rooms seated on their legs giving to the observer the impression of a mosque, as they pray audibly.

The patients on whom the Barraquer operation was performed did not include juvenile, traumatic and glaucomatous cataracts. In some patients, anesthesia was induced by the application of an ointment of eucatropine-cocaine a half hour before the operation. In other patients, anesthesia was induced by means of a 3 per cent cocaine and epinephrine solution applied fifteen minutes before the operation. The operation was performed on both eyes. Increase in the intra-ocular tension is a characteristic observed in patients with cataracts in India. The tension is never under 25 millimeters of mercury, which in Europe is considered as increased tension. The intra-ocular tension is an indication to the necessary operative procedure: Under 40 millimeters, total removal is performed, and below this number, extracapsular removal. The Barraquer operation was performed without paralyzing the orbicular muscles, because the religious beliefs of the natives prohibit this technic although it avoids many complications in the removal of cataracts. Peripheral iridectomy was performed in 15 per cent of the cases. The removal of cataracts is more difficult in India than in Europe because of lack of cooperation by the patients and in the absence of a better understanding of their languages. Dr. Holland performs the operation by the Indian method in this manner: incision of the cornea, iridectomy, and removal of the lens. The patients have their eyes bandaged for four days, during which time he sees them four times a day. In 1927, 1,252 operations for cataract were performed.

Dr. Payales says that the normal intra-ocular pressure is higher in India than in Europe. The fibers of the zonule are in a condition of total sclerosis. The frequency of cataract in India makes one think that it may be endemic there. The renown of Dr. Holland brings patients to Shikarpur from an area about 70,000 kilometers square. Lahore, which has the nearest university, and Jullundur, which has Smith's famous clinic, are located more than a thousand miles from Shikarpur. Total sclerosis of the zonular fibers is common in Indian patients; they look squalid, showing chronic starvation, since they live chiefly on rice and eat only once a week. Their physical con-

dition is the result of their respect for animal life, which is sacred to them. The lens undergoes sclerosis, and both the lens and the zonule present a premature oldness in a body which really is young. Besides starvation there are two other factors in the ocular disturbances of the natives: the glaring sunlight and consanguinity. The light produces photophobia and fatigue after a short stay in that country. Europeans combat it by means of protective glasses and the natives by painting their eyes with a powdered salt of antimony. The method of total removal enables the patients to leave the hospital fifteen days after the operation.

Seventy-Fifth Anniversary of El Siglo Médico

El Siglo Médico has issued a special number in celebration of its seventy-fifth anniversary. In a volume of about 222 pages the scientific and social problems of modern medicine are discussed by prominent physicians. Dr. Cortezo, the editor, who is also president of the State Council, has always strongly advocated and supported the true principles of medical science. The publication is issued weekly.

Experiences of Spanish Pediatrician in Foreign Pediatric Clinics

Dr. Velasco Pajares, head of the Hospital del Niño Jesús of Madrid, has recently visited pediatric clinics in several foreign countries. He says that the progress of pediatrics depends more on the ability of the physicians than on the conditions of the institutions. He saw poorly equipped clinics admirably conducted by eminent pediatricians, and others with excellent equipment that were conducted inefficiently. He says this for the benefit of those who believe that expensive clinics are necessary for fruitful work, and states further that with enthusiasm and constant work it is possible to obtain success in the most simple clinics. The organizations in the countries which he visited are superior to those in Spain, as they have trained nurses and assistant physicians. Some of the assistant physicians have scientific standing and professional incomes higher than that of the chief physician of the clinic, yet they fill their clinic appointments every morning at 8 o'clock, attend their patients, and consult with the head of the clinics about them. He, in turn, makes a diagnosis and sometimes debates with the assistant physicians about it. Milk is used in feeding the infants in all the clinics. The maintenance of the clinics is due, in part, to the industries of the countries and to the insurance societies to which the parents belong, as they pay the bills of the children while they are in the hospital.

Professor of General Pathology

Dr. Novoa Santos, who has been a teacher of general pathology in the University of Galicia, has been appointed professor of the same subject in Central University, Madrid. He is the author of the most up-to-date book on pathology that has been written in Spanish. His lectures in Madrid have been successful, having been attended by numerous students and physicians. Dr. Santos has given up his personal practice and is now a full-time professor.

Restriction of Narcotics

During the past two years orders have been published with regard to the sale of narcotics, and since the first of the year regulatory laws have been in force. Punishments are provided for actions or omissions which are considered as voluntary infractions of the laws. Physicians and pharmacists who violate them are punished by a fine of from 1,000 to 50,000 pesetas and by having their licenses suspended for three months. The punishment is more severe for those who partake in the production, importation or circulation of narcotics. Physicians are required to keep official records of all narcotics that are prescribed, and of names and addresses of the patients to whom they are prescribed.

Official Establishments for Free Consultation

The condition of physicians in Spain is unsatisfactory. The number of students in the medical schools is becoming greater every day, and the teachers, interested largely in obtaining good professional situations and large practices neglect their teaching and fulfil only the requirements as stated in the by-laws of the schools. In order to avoid losing popularity, they judge their pupils without requiring anything of them. This results in more physicians than patients, and, in order to attract the attention of the public, the physicians offer free consultation, which many patients take advantage of as being unable to pay the fees of physicians. The Medical College of Madrid has been trying to stop this abuse and as a result of some recent meetings has ordered that free consultations will be offered only by official establishments which belong to the state or city. To receive this free consultation, the patient must prove his poverty.

JAPAN

(From Our Regular Correspondent)

March 2, 1929.

Memorial Meeting in Honor of William Harvey

The tricentennial service in behalf of William Harvey was conducted in the Nakayama Culture Institute in Tokyo, December 10. Original copies of the "De motu cordis et sanguinis in animalibus," published at Frankfort-on-the-Main in 1628, and "Exercitationes de generatione animalium," 1651, were exhibited in the hall of the institute. The memorial lectures were "Recollections of Harvey," by Dr. H. Uagai, professor in the Tokyo Imperial University, and "The Works of Harvey," by Dr. Y. Teruoka, director of the Ohara Institute.

Celebration of Robert Koch's Birthday

Robert Koch's birthday was celebrated by Baron Dr. Kitasato and his friends at the Jiji Hall, Tokyo, December 11. The memorial lectures were delivered by Dr. S. Uyematsu, professor in the Keio Medical College, on "Feelings and Effects Received from Koch," and by Dr. M. Miyajima on "The Friendship Between Koch and Kitasato."

Death of Dr. Nagai

Dr. Nagayoshi Nagai, professor emeritus in the Tokyo Imperial University, died, February 10, in his eighty-fifth year. He was a member of the Imperial Academy, and had doctorships in both science and pharmacy. Influenza was the immediate cause of his death, although he had been suffering from cancer of the tongue for some time.

Smallpox

A third class passenger, a Filipino, on board the S. S. *President Cleveland,* which had just reached the port of Kobe, was suspected of having smallpox, February 17. The steamer was inspected at the Wada quarantine station, and although it proved to be smallpox the other passengers passed the inspection, and the steamer was allowed to weigh anchor for her next port, Yokohama. The authorities in Kobe are now taking precaution against spread of the disease.

Exchange Scholarship

The Germano-Japanese Culture Association has received much benefit in both countries from the exchange scholarship. The last scholar from Japan to the University of Berlin was Dr. Kanokogi, professor in the Kyushu Imperial University. It is now time for another exchange, and Dr. Junjiro Shimazono, professor of internal medicine in the Tokyo Imperial University, is to be sent to Germany. The professor, an authority on beriberi, left Tokyo, February 26, accompanied by some other medical scholars, and embarked on the S. S. *Fushimi* at Kobe.

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Socialization of Medical Service

The political social parties in Osaka are reported to be planning on the socialization of medical service in this country. They have published the following items: 1. Medical service shall be put under the management of the government or a public organization. 2. The present regulations of health insurance shall be improved, and be extended to the larger circles of mental, as well as physical, laborers. 3. The regulations of the medical associations for doctors' fees shall be abolished. 4. More public and free consultations centers shall be established. 5. Free public health clinics shall be established. In order to put their plan before the whole country, they will give lectures in many places.

Deaths of Infants

The dry weather of the past fifty days has caused a great many cases of influenza, especially among children. According to the report of the metropolitan police, 2,995 died from the disease during November, December and January. According to age, the number of deaths were as follows: 1,179 below 1 year of age; 824 from 1 to 2 years of age; 207 from 2 to 3, and 128 from 3 to 5.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 15, 1929.

Compulsory Exemption from Duty

The secretary of the city government recently announced to Dr. G. Araos Alfaro that, the time in which he may be exempted from his duties having come, he should stop practicing or he would be declared a retired physician. Dr. Araos Alfaro did not obey this order on the ground that the law gives him the right but not the obligation to be exempted from his duties. He said that he felt himself to be in full control of his physical and intellectual powers and that he preferred to continue in his profession. He stated, further, that the early exemption from duty of useful and yet energetic men is an unjust burden on the state. Such exemption has been disapproved by the public, and the municipal consulting body has decided that the retirement of men who satisfactorily fulfil their duties shall not be compulsory.

Serum Against a Spider's Poison

At the Institute of Physiology of the Faculty of Medicine of Buenos Aires, Dr. Emilio Troise has made a pharmacodynamic study on the poison of *Latrodectus mactans*. This spider is common in all America, from Terra del Fuego to New Hampshire. Its bite rapidly produces serious and alarming symptoms, which Puga Borne (from Chile), Cerruti, Houssay (from Argentina), Escomel (from Peru), Legnani (from Uruguay), Bogen (from the United States) and others have studied from clinical and experimental points of view. Troise has succeeded in immunizing rabbits with a glandular extract, and has thus obtained an active antitoxic serum, as he has informed the Argentina Society of Biology.

Surgical Organization

Recent occurrences have shown that the ideas of Argentinean surgeons have been of favorable influence. Prof. P. Chutro stated in a recent paper that it was necessary to stop the habit of subdividing the surgical services of the hospitals into twenty and thirty bed units in order to satisfy the vanity or the individualistic spirit of surgeons. He further insisted on the necessity of grouping 200 or 300 beds with a numerous personnel who would work in collaboration and in a specialized manner. Dr. Rodríguez Villegas, secretary of the Congress of Surgery, expressed similar opinions, suggesting also that henceforth one or two subjects should be discussed and disposed of at each conference. He emphasized that original subjects were scarce because of the lack of devotion to scientific researches in physiology, chemistry and bacteriology. Both surgeons insisted on the necessity of changing their points of view and on the necessity of collaboration.

Leprosy

Prof. P. Baliña has written a pamphlet in which he pleads that the work on the isolation and treatment of leprosy patients be intensified. Previous to 1910 he observed about 800 cases; from 1910 to 1921 he treated 142 patients, and in the last seven years, 229 others. In the Muñiz Hospital the number of cases has increased from 101 in 1921 to 220. According to the official census there are 1,336 cases in the entire country, 88 per cent of which are in the zones of the Paraná and Uruguay littorals. It is estimated that there are about 1,500 indigent leprosy patients in the country, who should be secluded. In Buenos Aires Dr. Baliña has treated thirty-four patients with contagious leprosy and some cases of familial leprosy. The recently enacted law, which is now beginning to be put in practice, provides for the establishment of six sectional leprosariums, which are to be in the provinces of Chaco, Santa Fe, Entre Ríos, and Salta, in Buenos Aires, and one in the central part of the country. Provisional leprosariums may be established in the meantime.

A Trip to the United States

A group of professors and scientists has left for the United States on a tour and study trip. They will visit some of the technical and teaching centers and institutions. In this first scientific interchange there are some university professors, among whom are Dr. Zappi, instructor of organic chemistry in La Plata, and V. Morera, teacher of biologic chemistry in Buenos Aires. Among the physicians there are Drs. Atilo Vadone, Bordarrampeand and E. A. Molinelli. Molinelli has made numerous studies in physiology and on infectious diseases. This excursion is backed by an American-Argentinean committee and by the Carnegie Institute. It is hoped that this first trip will initiate a regular interchange between these two countries which will contribute to a better understanding of the scientific and other interests which they have in common.

Personal Items

Dr. Juan B. Justo, a prominent surgeon, died recently. He developed the flap craniotomy, introduced asepsis into Argentina, and became a teacher of surgery. Later he devoted himself to political life, and was head of the socialistic party.

A committee has been appointed to look after the organization of a ceremonial meeting for paying homage to Prof. Luis Güemes, who has been one of the most prominent physicians in the country.

Drs. S. Mazza and J. Bacigalupo have returned from Cairo, where they attended the Congress of Tropical Pathology representing the government and the universities of Argentina.

Prizes for Scientific Works

The judges assigned to dispense the national prizes for the best scientific papers published in 1927 have awarded the first prize of 20,000 pesos to the book "Contribuciones a la Materia Médica Argentina," by Dr. Juan A. Dominguez, and the third prize to the paper "Quistes Hidatídicos del Riñón," by Dr. Ricardo Spurr. Dominguez's book is the first volume of a series of four volumes which are already published. It is an historical and biographic compilation dealing with the chemical and pharmacologic study of the natural drugs of the country, and presenting numerous chemical data and a list of the medical properties that laymen attribute to the drugs. This book, enlarged by Drs. Ricardo Rojas and B. A. Houssay, is the result of twenty-eight years of study. Dr. Dominguez has collected a valuable library and has a botanic and pharmacologic museum, which has herbariums and other collections.

The Royal Academy of History of Madrid has awarded its annual prize for 1928 to the book "Historia de la Medicina en el Rio de la Plata" by Prof. Eliseo Cantón.

University News

The president of the nation has restored order in the universities, which have experienced so much agitation recently. The leaders of the troubles have been not well received and this failure has brought them to their senses. In Rosario an incident happened which brought discredit to the students: Some of them insulted a citizen. This displeased the director of the Centenario Hospital and Dr. Roque Izzo, the national superintendent, and they have taken drastic and energetic steps to stop such doings. The University of Córdoba has been reopened by Dr. Posse, dean. It had previously been closed by him on account of the unrest of the students.

AUSTRALIA

(From Our Regular Correspondent)

Feb. 7, 1929.

Baby Clinic on Rails for Queensland

It has been announced by the Queensland government that a special baby clinic carriage is being constructed for the purpose of supplying baby welfare facilities to the mothers and babies of the sparsely populated districts of the state. The train will have a definite itinerary and will be staffed by two specially trained nurses. This development is the next stage in the government's baby welfare program.

Typhoid Diminishing in Australia

During the colonizing period of Australia's history, intestinal infectious diseases were a marked feature of the public health picture. The lack of communication between the various colonies, however, checked an extensive spread. The discovery of gold in 1851 resulted in the rapid accumulation of potential "get-rich-quicks" on the gold fields. The psychologic attitude of the competitors for the yellow metal tended to be incompatible with orderly and efficient sanitation, with the result that the typhoid germ increased in virulence. Faulty sanitary conditions with similar typhoid outbreaks occurred in the railway construction camps during the latter half of the nineteenth century.

Since 1875, continued development with pastoral and industrial activity has gradually resulted in a high standard of living for all classes. Slums, as they are known in the older countries, do not exist in Australia, with the possible exception of a small area at Wooloomooloo, a seaport suburb of Sydney.

The mortality rate from typhoid in New South Wales has been reduced from 52 per hundred thousand in 1875 to 5 per hundred thousand in 1924. In Victoria, the figure for 1893 was 22, and for 1923, 3. In Queensland it was 10 in 1875 and 2 in 1923. In South Australia it was 43 in 1875 and 3 in 1923. The corresponding figures for Western Australia were 150 in 1898 and 4 in 1923, and for Tasmania 50 in 1886 and 6 in 1923.

It is considered that one of the most important agents in spreading the typhoid bacillus in Australia is the house fly (*Musca domestica*). Measures directed toward the screening of privies have considerably assisted in reducing the incidence. The more extended use of 1 per cent phenol solution for sterilizing the infected discharges has also been a factor. Extension of laboratory facilities to rural areas in Australia has made it possible to exercise a more accurate bacteriologic control. The introduction of water carriage sewerage systems has reduced the endemicity, and no serious outbreaks of epidemic disease by gross pollution of water supplies have occurred in Australia. Preventive inoculation against typhoid has never been practiced to any extent, except with members of the Australian Imperial Force, every one of whom received the standard inoculation prior to embarkation. In my student days in 1920, it was difficult to have the opportunity of clinically studying a case of typhoid on account of the rarity of the disease. Clinical teachers, however, readily recalled the days when the medical wards of the general hospitals were so congested with typhoid patients that they overflowed into canvas wards erected in the grounds.

Personal

Sir George Syme, one of Australia's leading surgeons and a man who has had considerable influence on the medical development of Australia, recently returned from a trip abroad. Last December he was appointed to be chairman of the committee of management of the Melbourne Hospital, where he originally obtained his first medical experience as a resident medical officer. Early in his professional career he studied in London and gained a fellowship at the Royal College of Surgeons. Then followed a long association with the Melbourne Hospital and the Victorian branch of the British Medical Association. He served during the war. He was president of the Australian Medical Congress in 1923, and was knighted in 1924. In that year he retired from practice, but retained his position as surgeon to the police hospital. He was president of the National Health Commission. He is a member of the Melbourne University Council, and chairman of the federal committee of all Australian branches of the British Medical Association. He was one of the founders of the College of Surgeons of Australia, and was the first president, a position he still holds. For some years he has been a member of the committee of management of the Melbourne Hospital, holding positions on various subcommittees.

Welfare of Ex-Soldiers

The total expenditure by the commonwealth in making provision for its ex-soldiers subsequent to their discharge from the forces, up to June 30, 1928, was £182,945,564. This total includes war gratuities, land settlement and war service homes. The department of repatriation spent £94,673,592 of this total. Included in this department's expenditure is £4,172,186 for medical treatment. The number of ex-soldiers under treatment for each of the past seven years was:

Year	Inpatients	Outpatients	Total
1922	2,434	1,858	4,292
1923	2,383	2,140	4,523
1924	2,079	2,576	4,655
1925	2,091	3,072	5,163
1926	1,560	4,421	5,981
1927	1,461	4,982	6,443
1928	1,431	6,599	8,080

The number of artificial limbs supplied and repaired during the year was in keeping with other years, and the materials issued included, besides artificial limbs, surgical boots, spinal jackets, invalid chairs, crutches and other aids. The change from wood to duralumin legs is proceeding steadily, and seventy metal legs of various types were issued in one state. As might be expected, these legs presented many problems in the early stages of manufacture, but these have been overcome until a good and enduring limb is being produced which is equal in comfort and appearance to that issued in other parts of the world.

Motor cars are now being provided by the repatriation department for seriously disabled ex-soldiers. In reviewing the provision for badly disabled men, the commonwealth government decided during the past year that "the repatriation commission be empowered to provide transport (or arrange for suitable transport at a cost not exceeding £10 per month per man) for recreation under departmental medical advice for those soldiers totally and permanently incapacitated as a result of spinal, head, pelvic or hip injury, organic cerebral or spinal disease, and double amputation above or at the knee, whose means of locomotion, because of war disability, is permanently restricted to wheel chairs or cots." Under this provision it becomes possible

for an eligible ex-soldier, whether resident in the metropolitan or country district, or at a home or an institution, to lead a brighter life and to be closer to the normal activities of life than would be the case if provision for transportation was not available to him. Under this arrangement men may own their own cars or hire touring cars. In some instances, it has been necessary to build specially constructed cars to permit the beneficiary to have a conveyance in conformity with his incapacity. To make it possible for men who do not own cars to do so, the commission authorized the accumulation of the monthly allowance of £10 or any unexpended portion of it for a period up to six months, so that a lump sum deposit could be paid to the vendor. When this provision has been availed of by the ex-soldier, the monthly allowance of £10 could be used by him in meeting the periodic payments in respect of purchase or for the running costs of the car itself.

Leprosy Treatment in the Pacific

The two medical commissioners appointed by the League of Nations have just completed the South Melanesian portion of their investigation into the medical situation in the Pacific islands. Medical conditions in Papua and the North Melanesian islands will be studied early this year. The British leper settlement at Makogai, which is conducted under the direction of the Fijian authorities, and the French settlement at Ducos near Noumea were visited. The commissioners were astounded at the good results of the modern treatment of leprosy. Inmates of the two settlements are being released as cured at the rate of thirty a year. High tribute was paid to the devotion of the French sisterhood, which tends the sufferers at these leper settlements. Some of these sisters had not left the island for seventeen years.

At Ducos, there are about 100 Europeans and half castes receiving treatment, the native lepers in the neighborhood numbering between 500 and 600. Leprosy was considered to be New Caledonia's chief medical problem. The commissioners found great difficulties in coordinating the medical work of the New Hebrides, where the government was in the form of a condominium. The work is centered in too many different interests. The final report of the investigation will be forwarded in due course to the League of Nations. An item on this commission appeared in THE JOURNAL, Dec. 22, 1928, p. 2009.

BERLIN

(From Our Regular Correspondent)

March 9, 1929.

Has the Mortality from Cancer and Diabetes Increased?

The increase in the number of deaths from cancer is remarkable because of the fact that similar conditions prevail in all civilized countries. In fact, cancer appears to have become in many countries the chief cause of death, having only recently replaced tuberculosis. The increase of cancer during the past twenty years has been marked. According to statements made by Dr. Georg Wolff, chief school physician of Berlin, as contained in an article published in the *Deutsche medizinische Wochenschrift*, Berlin shows an increase of deaths from cancer (including other malignant neoformations) from 2,438 in 1907 to 3,383 in 1927.

A slight increase in the number of deaths from diabetes during the postwar period (since 1921, more particularly) has likewise been noted, though it is still below the absolute mark for the prewar years in Berlin. The increase in the deaths from diabetes attracted attention only because it followed immediately the unexpectedly favorable status of the starvation years of 1917 to 1920.

Wolff is now endeavoring to establish whether the increase in the number of deaths from cancer, as revealed by the absolute figures, and also (with the aforementioned reservations) the increase in the number of deaths from diabetes, signify an actual increase of these diseases in the population, or whether special causes must be sought in the change in the composition of the population. In order to clarify the situation, one must not rely on a comparison of the absolute figures in regard to deaths during the prewar and the postwar periods but must compute standard mortality rates, which take account of any unusual peculiarities in the age distribution and thus seek to allow for errors occasioned thereby, by using a population with a normal and constant age distribution as a basis for computation. Such a standard computation was employed by Wolff for ascertaining the general mortality of the German reich and of Berlin, and was then used for determining the mortality from tuberculosis, cancer and diabetes in Berlin for the census year 1925, as compared with the results secured for 1910, the last prewar census year. The composition of the population of the reich in 1910 served as the normal, or standard, population.

On the basis of this standard computation, as explained in the article mentioned, Wolff thinks that it may be regarded as established that, at least in Berlin, neither cancer mortality nor the mortality from diabetes shows any actual increase within the last twenty years. The increase in the unadjusted cancer mortality is due to changes in the age distribution of the population. The tuberculosis mortality, however, shows a marked decrease during the past twenty years. The opposite behavior of tuberculosis and cancer, which is in line with the results of sociopathologic research as to causes, and the study of the influence of the social milieu on these two causes of death by means of delicate methods derived from correlation statistics, possesses considerable importance from an etiologic point of view. Tuberculosis is a genuinely infectious disease that takes a chronic course, and is therefore dependent, to a great extent, on external influences; theoretically, it ought to be possible to eradicate tuberculosis entirely and thus to reduce its mortality to zero. Cancer, on the other hand, appears to have an entirely different pathologic cause, probably of an endogenous type, and is much less dependent on external conditions. The adjusted cancer mortality rate for the year 1910 (11.89 per 10,000) is nearly the same as that for the year 1925 (11.49 per 10,000).

Vital Statistics of Prussia

A marked increase in the number of marriages in Prussia was recorded for the second quarter of 1928. The average marriage rate in the large cities was 10.44 per thousand of population, as compared with 9.59 and 8.75, respectively, per thousand for the corresponding quarters of 1927 and 1926. The highest marriage rate was recorded in Berlin (12.03). The decline in the birth rate continues but is slight. The average birth rate of the large cities was 18.27 per thousand (18.44 per thousand for the second quarter of 1927). The highest birth rates were noted in Hamborn (24.17 per thousand) and in Hindenburg, Upper Silesia (23.18 per thousand); the lowest, in Berlin (14.54 per thousand). The mortality was 12.37 per thousand, which shows an increase over the rate for the second quarter of 1927 (11.65 per thousand). Halle (16.35 per thousand) and Königsberg (15.59 per thousand) presented very high rates, which are explained, in part, by the fact that the university clinics are visited by many nonresidents. The infant mortality rate for the quarter under review was not unfavorable. The average mortality rate in the large cities for children under 1 year of age was 9.0 per hundred living births, as against 9.1 for the second quarter of 1927. In consequence of the decline in the birth rate and of the increased mortality, the excess of births over deaths was less than for the previous year. The average excess of births over deaths for the large cities was only 5.90 per thousand, in contrast with 6.79 per thousand for the same quarter in 1927. Berlin had again an excess of deaths (over births) of 1,680 persons (1.59 per thousand).

Marriages

BENJAMIN F. ECKMAN, Homestead, Fla., to Mrs. Irene H. Bril of Covington, Ky., at Florida City, recently.

HARRY HUDNALL WARE, JR., to Miss Mary Warren Williams, both of Richmond, Va., February 16.

ALBERT RUSSELL BUSH to Miss Amelia Carolyn Berry, both of Hawkinsville, Ga., February 20.

SALVATORE DI PALMA, New York, to Miss Salvina Miceli, April 3.

Deaths

Bryce Washington Fontaine ✠ Memphis, Tenn.; University of Texas School of Medicine, Galveston, 1896; University of Pennsylvania School of Medicine, Philadelphia, 1897; secretary of the Section on Practice of Medicine since the 1926 Annual Session of the American Medical Association; member of the American Gastro-Enterological Association, the American College of Physicians and the American Climatological and Clinical Association; formerly associate professor of medicine and chief of the clinic, College of Physicians and Surgeons, Memphis, and associate professor of medicine, clinical medicine and physical diagnosis, University of Tennessee College of Medicine; formerly on the staff of the Gartly-Ramsay Hospital; aged 51; died, March 31.

David Fairchild Weeks ✠ Skillman, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1898; member of the American Psychiatric Association; past president of the Mercer County Medical Society, the Somerset County Medical Society, the National Association for the Study of Epilepsy and the New Jersey Conference for Social Welfare; superintendent of the State Village for Epileptics, Skillman; formerly on the staffs of the Somerset (N. J.) Hospital, and the Mercer Hospital, Trenton; aged 54; died suddenly, March 15, of angina pectoris.

John Francis Moran ✠ Washington, D. C.; Georgetown University School of Medicine, Washington, 1887; professor of obstetrics at his alma mater; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, and the Southern Surgical Association; served during the World War; formerly on the staffs of the University Hospital and the Columbia Hospital for Women and Lying-In Asylum; aged 64; died, March 16, of myocarditis, chronic nephritis and arteriosclerosis.

Jerome E. Wright, Russellville, Ark.; University of Arkansas School of Medicine, Little Rock, 1915; member of the Arkansas Medical Society; past president and secretary of the Pope County Medical Society; served during the World War; aged 44; on the staff of St. Mary's Hospital, where he died, March 5, of abscess of the lungs following amputation of the leg.

Daniel Edward Keefe, Springfield, Mass.; Medical Department of the University of the City of New York, 1882; member of the Massachusetts Medical Society; one of the founders, president and for many years on the staff of the Mercy Hospital; aged 80; died, March 9, of bronchopneumonia and valvular heart disease.

Charles W. Snook, Clarksville, Ohio; Medical College of Ohio, Cincinnati, 1891; member of the Ohio State Medical Association; formerly president of the board of health of Clinton County; aged 60; died, March 11, at the McClellan Hospital, Xenia, of diabetes mellitus and heart disease.

Brice W. Goldsborough ✠ Cambridge, Md.; University of Virginia Department of Medicine, Charlottesville, 1880; past president of the Medical and Chirurgical Faculty of Maryland; for many years on the staff of the Cambridge Hospital; aged 69; died, March 21, of heart disease.

William Frederick Beutler ✠ Wauwatosa, Wis.; Niagara University Medical Department, Buffalo, 1891; member of the Psychiatric Association; superintendent of the Milwaukee County Asylum for Chronic Insane; aged 63; died suddenly, March 9, at Taos, N. M.

Garrett Lee Hynson, Portland, Ore.; Jefferson Medical College of Philadelphia, 1911; member of the Oregon State Medical Society; served during the World War; instructor in surgery, University of Oregon Medical School; aged 45; died, February 17.

Homer Silon Henkel, Staunton, Va.; Medical College of Virginia, Richmond, 1914; member of the Medical Society of Virginia; formerly on the staff of the King's Daughters' Hospital; aged 43; died, February 12, in Baltimore, of heart disease.

James Ferguson Drake, Terre Haute, Ind.; Rush Medical College, Chicago, 1886; member of the Indiana State Medical Association; served during the World War; aged 64; died, March 11, of valvular heart disease and coronary thrombosis.

Edward Stanard Buffington, Huntington, W. Va.; Jefferson Medical College of Philadelphia, 1872; member of the West Virginia State Medical Association; Civil War veteran; formerly mayor; aged 81; died, February 24, of heart disease.

James Edward Gartside, Kingston, Mo.; Physio-Medical College of Indiana, Indianapolis, 1883; member of the Missouri State Medical Association; county health officer; aged 68; died, March 2, at the Trinity Lutheran Hospital, Kansas City.

Duncan A. Carmichael ✠ Washington, D. C.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1873; senior surgeon, U. S. Public Health Service; aged 77; died, February 12, at Vineyard Haven, Mass., of acute myocarditis.

Erastus R. Zimmerman, Elkhart, Ind.; University of Michigan Homeopathic Medical School, Ann Arbor, 1903; member of the Indiana State Medical Association; aged 50; died, March 2, of cerebral hemorrhage and nephritis.

Herbert E. Twitchell, Hamilton, Ohio; Miami Medical College, Cincinnati, 1882; veteran of the Spanish-American War; aged 74; died, March 4, at the National Military Home (Ohio) Hospital, of chronic myocarditis.

Roland M. McSweeney, St. Johnsbury, Vt.; University of Vermont College of Medicine, Burlington, 1892; member of the Vermont State Medical Society; aged 66; died, February 26, of pneumonia and arteriosclerosis.

John W. Van Horn, Montoursville, Pa.; Jefferson Medical College of Philadelphia, 1894; member of the Medical Society of the State of Pennsylvania; aged 66; died, January 21, at the Williamsport (Pa.) Hospital.

Abraham Lebendig ✠ Shenandoah, Pa.; Columbia University College of Physicians and Surgeons, New York, 1910; served during the World War; aged 41; died, February 20, of coronary thrombosis.

James M. C. Atchley, Hartford, Tenn.; Tennessee Medical College, Knoxville, 1902; member of the Tennessee State Medical Association; aged 55; died, March 9, at the Fort Sanders Hospital, Knoxville.

Joseph Myre, Central Falls, R. I.; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1897; medical director of the Notre Dame Hospital; aged 58; died, March 11, of angina pectoris.

Barney H. Chamberlin, Whittier, Calif.; Rush Medical College, Chicago, 1887; member of the Illinois State Medical Society; aged 66; died in February, of angina pectoris and diabetes mellitus.

Harry Marshall Armitage ✠ Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1908; on the staff of the Chester Hospital; aged 42; died, February 14, at Elk Neck, Md.

Kathryn Elizabeth Gunby-Wells, Montebello, Calif.; Drake University College of Medicine, Des Moines, 1913; member of the California Medical Association; aged 37; died, February 28.

George William Vanden, Gallipolis, Ohio; Medical College of Ohio, Cincinnati, 1886; member of the Ohio State Medical Association; aged 65; died, in February, at the Holzer Hospital.

Lemuel Daniel Chapman, Georgetown, Miss.; University of Nashville (Tenn.) Medical Department, 1902; aged 55; died, March 15, at the Baptist Hospital, Jackson, following an operation.

John F. Lancaster, Mobile, Ala.; Atlanta Medical College, 1883; United States quarantine officer for the U. S. Public Health Service; aged 68; died, March 19, of cerebral hemorrhage.

Samuel S. C. Phippen ✠ Owosso, Mich.; McGill University Faculty of Medicine, Montreal Que., Canada, 1883; on the staff of the Memorial Hospital; aged 67; died, March 12, of heart disease.

Henry Proctor Buckingham ✠ San Francisco; University of Michigan Medical School, Ann Arbor, 1923; aged 31; died, March 11, at the Hahnemann Hospital, of bronchopneumonia.

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A. A. Blasingame, Kemp, Texas; Memphis (Tenn.) Hospital Medical College, 1895; aged 62; died, March 3, in a hospital at Dallas, of pneumonia and meningitis, following otitis media.

John Craig Taylor ✠ Chelsea, Okla.; University of Louisville (Ky.) School of Medicine, 1898; member of the American College of Physicians; aged 55; died, March 4, of pneumonia.

Edward A. Stafford ✠ Snohomish, Wash.; Rush Medical College, Chicago, 1888; formerly on the staff of the Snohomish General Hospital; aged 69; died, March 10, of diabetes mellitus.

James Franklin Dawson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1888; formerly on the staff of the Toronto Western Hospital; aged 71; died, January 30.

John A. Ryan, Valparaiso, Ind.; Bennett College of Eclectic Medicine and Surgery, 1878; member of the Indian State Medical Association; aged 77; died, March 15, of myocarditis.

Walter Corliss, Astoria, N. Y.; Dartmouth Medical School, Hanover, N. H., 1885; aged 71; died, February 16, at the Methodist Episcopal Hospital, Brooklyn, of myocarditis.

Frank Templeton Smith ✠ Troy, N. Y.; Albany (N. Y.) Medical College, 1903; on the staffs of the Leonard and Samaritan hospitals; aged 52; died, February 13.

Norman Robert Graham ✠ Sharpsburg, Pa.; Jefferson Medical College of Philadelphia, 1887; served during the World War; aged 63; died, March 5, of lobar pneumonia.

Vega Berry, Bainbridge, Ga.; Kentucky School of Medicine, Louisville, 1869; aged 81; died, February 28, in a local hospital, of injuries received when struck by an automobile.

Samuel Van Hoefen ✠ San Diego, Calif.; University of Munich, Germany, 1873; member of the Missouri State Medical Association; aged 79; died, March 2, of influenza.

Arthur M. Lavallee ✠ Suncook, N. H.; Montreal School of Medicine and Surgery, Montreal, Que., Canada, 1890; aged 64; died, February 8, of angina pectoris.

John Howard Bullard, Machen, Ga.; Atlanta Medical College, 1875; member of the Medical Association of Georgia; Confederate veteran; aged 79; died in March.

Charles H. Baker, Philadelphia; Homeopathic Medical College of Missouri, St. Louis, 1868; Civil War veteran; aged 90; died, March 26, of heart disease.

George Herbert Schaber, Newport, Ky.; Eclectic Medical College, Cincinnati, 1928; aged 36; died, March 10, at the home of his father-in-law at Alexandria.

John J. Nelson, Columbia, Va.; University of Virginia Department of Medicine, Charlottesville, 1876; aged 73; died, February 15, of cerebral hemorrhage.

Eva Argene Adams, Brunswick, Maine; Tufts College Medical School, Boston, 1902; aged 54; died, January 25, at the Eye and Ear Infirmary, Portland.

Jonathan Dwight, Jr., New York; Medical Department of Columbia College, New York, 1893; aged 70; died, February 22, of carcinoma of the bladder.

Frank Gregory, Valders, Wis.; Kentucky School of Medicine, Louisville, 1879; aged 79; died, March 8, at St. Joseph's Hospital, Tacoma, Wash.

J. Howard Frick, Philadelphia; Jefferson Medical College of Philadelphia, 1888; aged 69; died, February 14, of arteriosclerosis and myocarditis.

Joseph B. Bryant, Mesquite, Texas; University of Louisville (Ky.) School of Medicine, 1890; aged 71; died, Nov. 7, 1928, of arteriosclerosis.

Ellen Maria Bergstrom ✠ Chicago; Chicago Medical School, 1923; aged 50; died, March 8, of acute dilatation of the heart and nephritis.

Duncan Bell Irving, Vancouver, B. C., Canada; L.R.C.P., London, M.R.C.S., England, 1883; aged 72; died, February 13, following a long illness.

Arthur John Tenney ✠ Branford, Conn.; Yale University School of Medicine, New Haven, 1883; aged 73; died, February 26, of heart disease.

George Grant Birchard, Boston; University of Pennsylvania School of Medicine, Philadelphia, 1895; aged 63; died, March 18, of pneumonia.

Gardner L. Sturdivant ✠ South Portland, Maine; Medical School of Maine, Portland, 1899; aged 55; died, March 13, of cerebral hemorrhage.

Zachary Taylor Arnold, Amity, Mo.; University of Michigan Medical School, Ann Arbor, 1884; aged 81; died, March 3, at St. Joseph, Mo.

Joseph Hicks, Calhoun Falls, S. C.; Harvard University Medical School, Boston, 1890; aged 79; died, March 6, of chronic nephritis.

Ruey Bartlett Stevens, Roslindale, Mass.; Tufts College Medical School, Boston, 1898; aged 72; died, March 8, of pulmonary edema.

Marlin H. Coan, Wyandotte, Mich.; Michigan College of Medicine and Surgery, Detroit, 1900; aged 55; died, March 11, of heart disease.

Clarence Francis Dail, San Diego; Hahnemann Hospital College of San Francisco, 1900; aged 55; died, March 6, of heart disease.

Charles James Walker, Brooklyn; Long Island College Hospital, Brooklyn, 1903; aged 65; died, March 1, of carcinoma of the larynx.

David M. Rank ✠ Annville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1900; aged 52; died, February 10.

Thomas B. McIndoe ✠ Rhinelander, Wis.; Rush Medical College, Chicago, 1883; aged 67; died, March 23, of cardiac thrombosis.

Thomas J. Tiffany ✠ Berrysburg, Pa.; Homeopathic Hospital College, Cleveland, 1888; aged 74; died, January 22, of pneumonia.

Joseph Miles Grube, Punxsutawney, Pa.; Medico-Chirurgical College of Philadelphia, 1889; aged 67; died, February 9.

Hamilton Chesley Perkins, Boston; College of Physicians and Surgeons, Boston, 1911; aged 41; died, March 3, of lobar pneumonia.

Florence E. Donnelly, Conshohocken, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1902; aged 55; died, March 15.

Lee Ganson ✠ Yakima, Wash.; Rush Medical College, Chicago, 1894; aged 59; died, March 3, of acute dilatation of the heart.

Felix A. Boericke, Bryn Athyn, Pa.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 71; died, February 23.

Joshua Fry Speed, Richmond, Va.; University of Louisville (Ky.) School of Medicine, 1901; aged 52; died, February 9.

James Woodbury Neff, Reinerton, Pa.; Jefferson Medical College of Philadelphia, 1888; aged 68; died, March 20, of uremia.

John C. Secor ✠ Westfield, Pa.; University of Vermont College of Medicine, Burlington, 1885; aged 74; died, Dec. 31, 1928.

Richard J. Fritzinger, Huntingdon Valley, Pa.; Jefferson Medical College of Philadelphia, 1870; aged 80; died, March 1.

Edward John Welch ✠ Lowell, Mass.; Harvard University Medical School, Boston, 1890; aged 65; died, February 19.

Frank W. Jewett, Lakeview, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 64; died, March 5, of septicemia.

Albert G. Mountz, Chauncey, Ill.; American Medical College, St. Louis, 1878; aged 80; died, February 21, of pneumonia.

Albert Madison Key, Franklin, Ky.; University of Nashville (Tenn.) Medical Department, 1876; aged 81; died, recently.

William Henry Harris, Kiowa, Kan.; American Medical College, St. Louis, 1881; aged 70; died, January 9, of nephritis.

William Herbert Boone ✠ Hopedale, Ill.; Rush Medical College, Chicago, 1900; aged 52; died, March 12, of pneumonia.

Duncan Paterson McPhail, Highgate, Ont., Canada; Trinity Medical College, Toronto, 1887; died, Dec. 8, 1928.

Joseph S. Cipes ✠ Los Angeles; Temple University School of Medicine, Philadelphia, 1910; aged 46; died, February 4.

William H. Holsberg, Lebanon, Pa.; Hahnemann Medical College of Philadelphia, 1878; aged 74; died, February 25.

Clark A. Moore, Cambridge, Ohio; Starling Medical College, Columbus, 1865; aged 88; died, March 8, of senility.

Thomas P. Conlan, New York; Harvard University Medical School, Boston, 1887; aged 65; died, February 9.

Samuel Howard, Braddock, Pa.; Leonard Medical School, Raleigh, N. C., 1898; aged 59; died, February 4.

Peter Shallioll ✠ Winesburg, Ohio; Medical College of Ohio, Cincinnati, 1884; aged 77; died, March 1.

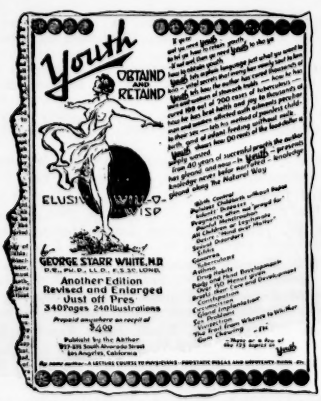
Thomas Henry Trinwith, Los Angeles; Milwaukee Medical College, 1901; aged 52; died, February 14.

Bureau of Investigation

GEORGE STARR WHITE—QUACK

George Starr White of Los Angeles has been quacking it consistently for many years. White was born in 1866, was a "drugless healer" for some years, and finally, when he was forty-two years old, obtained a diploma from the New York Homeopathic Medical College in 1908. White has more degrees than a thermometer. He claims the degree of Ph.D. from the National Eclectic Institute, Inc.—whatever and wherever this may be; the degree of LL.D. from Oskaloosa College, granted in 1919 (and White is not the first quack to whom Oskaloosa College has granted an honorary (?) degree); the degrees of "N.D.," "D.C.," and "Ph.C." from the Los Angeles College of Chiropractic (all of these being granted in 1921); and finally, the degree of "D.O." (likewise granted in 1921) from the notorious diploma mill, Vetus Academia Physio-Medical.

In addition to these numerous American "degrees," he declares himself a "Fellow" of the incorporated "Society of Science, Letters and Art" of London. This, to the uninitiated, carries an air of erudition and mystery. The Society of Science, Letters and Art of London was a serio-comic fraud conducted by a cockney named Sturman, who, as a side-line, acted as an agent for the sale of various bogus degrees of American origin. Fellowship was granted to anybody that would send Sturman one guinea ($5). The "degrees" have been much sought after by American quacks and "patent medicine" fakers, among them being the old cancer quack Benjamin F. Bye, the consumption quack Judd Q. Lloyd, the notorious testimonial giver Willard H. Morse of Westfield, New Jersey, the rheumatism quack Jesse A. Case, and others. After obtaining his diploma from the New York Homeopathic Medical College in 1908, White obtained a license to practice in New York, California, Connecticut, Nevada and Michigan.



Greatly reduced reproduction of one of George Starr White's advertisements in that haven of quackery, the Sunday Illustrated Magazine section of the Los Angeles Times.

As long ago as 1915 White had espoused the cult of "spondylotherapy," founded by the leading quack of the century, Albert Abrams, and in that year White was giving in the West and Middle West one-week "courses" in spondylotherapy. In May, 1915, White came to Chicago, apparently in connection with his "lecture courses," and, while in that city, was arrested and fined $100 and costs for violation of the Medical Practice Act.

White is strong on endorsements. The RadiumactiV Company of California, that put out a line of quack radioactive preparations, published a testimonial from George Starr White, who was quoted as saying that he had used the "RadiumactiV Clay" and was going to boost it in the new edition of his lectures to physicians. The Electro Thermal Company of Steubenville, Ohio, which put out the "Electrothermal Dilator" under the claim that it would cure "prostatic trouble," published a puff by George Starr White and appended thereto a list of the alleged learned organizations in which White held membership. The exploiters of a so-called Traction Couch, put out from Duluth, Minnesota, and having the appearance of a modern adaptation of the old rack of the Inquisition, reproduced a letter from George Starr White, in which he stated that his patients were delighted with the couch and his pupils were "enthused" over it. The makers of a "deep therapy" lamp published a testimonial for their device from White, who expressed the opinion that it was the "most perfect therapeutic lamp outfit that has ever been gotten out." White started as a booster for the Abrams E. R. A. quackery, although, later, he seems to have decided that he could accomplish more—for White—by being a competitor rather than a follower of Abrams.

White is also a "joiner." There may be a "twilight-zone" medical or quasi-medical organization to which White does not belong, or has not belonged, but if so, its name is not available. Here are fourteen of the thirty-nine organizations of which White claims to be a member:

American Medical Liberty League.
Allied Medical Associations of America.
American Association for Medico-Physical Research.
Central Society of Physical Therapeutists.
National Society of Physical Therapeutists.
American Electro-Therapeutic Association.
American Naturopathic Association.
California Anti-Vivisection Society.
Maryland Anti-Vivisection Society.
New England Anti-Vivisection Society.
National Anti-Vaccination League of London.
Citizens' Medical Reference Bureau, N. Y. C.
No-Tobacco League of America.
National Geographic Society.

During the past few years, however, White seems to have settled down into a general, all-around quack—both mail-order and residential. During the height of the influenza epidemic of 1918-1919, White put on the market a "patent medicine" that he called "Valens Essential Oil Tablets," which were for "Gripping the Flu out of Influenza" and were also said to greatly benefit or cure incipient tuberculosis, hay fever, asthma and catarrh. About the same time White also put out "Valens Oxygen Vapor"—whatever that might have been—and he announced that he was willing to sell his "private stock" of this preparation for $30 a gallon. His Oxygen Vapor Oil, apparently, grew out of a little earlier piece of quackery indulged in by White—the exploitation of "Oxygen Vapor," which seems to have some relation to "Oxyolene," put out by the Neel-Armstrong Company of Akron, Ohio. In 1915 and 1916 the Neel-Armstrong concern was exploiting what they were, then, calling "Oxygen Vapor" and advertising it by booklets that were credited to George Starr White.

But it is in the field of fake physical therapy that White really distinguishes himself. Consider, for instance, his "Filteray Pads." This is a rather obvious electrical heating pad on which White, thanks to the lack of discrimination on the part of the United States Patent Office, has obtained a patent. White claims that his Filteray Pad differs from an ordinary electrical heating pad, in that the heat that comes from his pad has to pass through his "Perfected Chemo-Chromatic-Ultra-Red-Ray Filter." The Filteray Pad, it seems, is good for falling hair, Bright's disease, colitis, diabetes, epilepsy, "lumps in the breast," malaria, nervousness, paralysis, "skin diseases of all kinds," sleeping sickness, tuberculosis and "all tumors, malignant or benign." In fact, there is given an alphabetic list—ranging from acne to x-ray burns—of about 150 pathologic conditions that are alleged to have been benefited by the Filteray Pad.

Then, White has his "Valens Bio-Dynamo Prostatic Normalizer," which is "for prostatic and rectal troubles." This device is a large size rectal dilator made of metal and, apparently, containing within it a magnet. Intriguing pictures of the Valens Bio-Dynamo Prostatic Normalizer show radiating from it lines of magnetic force, and one especially interesting illustration presents the device in situ, with what appears to be an elaborate display of fireworks coming from the "Normalizer" and completely enveloping the pelvic region of the male subject in which it is applied!

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The principle of the "Prostatic Normalizer" was much too good to limit to a single sex, hence George Starr White also has a "Valens Bio-Dynamo Pelvic Normalizer," for application within the vagina. This device is a "Sexual Normalizer" and a "natural rejuvenator." Illustrations show the "Sexual Normalizer" in position, with the same sort of a fireworks display as is shown in the case of the "Prostatic Normalizer." White's prices for his two normalizers are, to the public, $35 for the "Prostatic Normalizer" and $45 for the "Pelvic Normalizer," with a $10 discount, on each, to physicians.

About the time that Abrams was getting a large amount of publicity—and perquisites—in the exploitation of his so-called electronic reactions—"E. R. A."—White was featuring his "Bio-Dynamo-Chromatic Diagnosis," which he abbreviated "B-D-C." The difference between Abrams' diagnostic methods and White's was not great. White's method seems to have been to have the patient face east or west and have his bare abdomen percussed until a dull area was located. The patient was then faced north or south and again percussed. Then different colored lights were thrown on the patient, the location of the areas of dulness being determined meanwhile. It was claimed that a combination of ruby and blue lights will "cause a reflex in cases of gonorrhea," a "green light will cause a reflex in cases of liver or gallbladder trouble," while the color for carcinoma was orange-red. White claimed at the time that his B-D-C would "diagnose cancer before any known method" and that many cases that had been diagnosed as nonsyphilitic, he "diagnoses by this method as being syphilitic, and time has proved they were."

One does not hear so much today of White's Bio-Dynamo-Chromatic Diagnosis for the scheme seems to have undergone an evolution, and we now have "Rithmo-Chrome Therapy," which, we are told, is "treatment by means of rhythm, complementary colors and the magnetic forces of the earth—all in harmony or tune with the patient." Of course, Dr. White has some apparatus to sell to those who wish to adopt his particular brand of quackery. There was the "Rithmo-Lite Generator," which was said to be a powerful machine devised by him "for fading in and fading out light from one or more fifteen-hundred-watt lamps at one time"; then, there was the machine known as the "Rithmo-Chrome," which he devised for "fading in and fading out colors in rhythmic recurrence to harmonize with any individual."

But White, apparently, is not particular about what special brand of treatment is used, just so it is the White treatment. He has even suggested that it is advantageous to the patient to inhale his "Oxygen Vapor" at the same time that the patient is taking his Rithmo-Chrome-Dynamo-Chromatic Treatment," and, while doing so, have the same patient sit on one of his Filteray cushions! Presumably, it is only because the patient is sitting that he did not also suggest that his "prostatic Normalizer" be used at the same time!

In passing, it is worth calling attention to the lack of originality shown by White in his various brands of quackery. The "Bio-Dynamo-Chromatic Diagnosis" was a modification of Abrams' "E. R. A.," of which White was at first a disciple; his "Valens Bio-Dynamo Prostatic Normalizer" is a modification of the rectal dilator put out by the Electrothermal concern, for which White gave a testimonial; his "Rithmo-Chrome Therapy" seems to be a modified form of another fake known as "Spectro-Chrome Therapy" and exploited by a quack, one Dinshah P. Ghadiali; his "Valens Oxygen Vapor" seems to have a definite relation to the old "Oxyolene" of the Neel-Armstrong concern, while his "Filteray Pad" differs it seems only in the size of the device from the "Vit-O-Net" quackery.

Printers' ink is the life-blood of quackery. But it costs money and the quack who knows the business does not draw wholly on his own bank account for the publicity necessary to keep him before his public. There flourish in our country various organizations definitely anti-medical and distinctly inimical to public health. These are supported mainly by well-meaning, but ignorant, persons whose ignorance, prejudices and wrong-headedness are played on by shrewd individuals who make an easy living conducting these organizations. There are anti-vivisection societies, anti-vaccination societies, leagues for medical freedom, medical liberty leagues, and other organizations that bring in a handsome income to those that conduct them.

As part of the propaganda that such organizations put forth, quotations from persons who are supposed to have special knowledge in the field of medicine are as necessary as are testimonials to the "patent medicine" industry. Naturally, such organizations are unable to obtain statements that suit their purposes from reputable physicians. But that part of the public that is deluded by concerns of this type is wholly unable to distinguish between a William Osler and a George Starr White. Naturally, then, when quacks of the White type wish to get some free publicity, they make statements that will support the peculiar fallacies promulgated by organized faddists, and they are, then, quoted and their names played up, thus gaining much publicity at no cost.

One of the most active of the anti-medical groups is the "American Medical Liberty League," founded a few years ago by "patent medicine" quacks and devoted to damning scientific medicine in general and the American Medical Association in particular. As incidental to the attempt on the part of the American Medical Liberty League to discredit scientific medicine, it has for some time opposed the tuberculin test for milk-cows and, undoubtedly, has obtained substantial financial support from those whose selfish interests would abolish the tuberculin test. Part of the propaganda against tuberculin testing of cattle issued by the American Medical Liberty League is an article by "George Starr White, M.D., F.R.S.A., London," and several instances have come to the attention of the American Medical Association in which, when an organized fight was being made in the state legislatures against the tuberculin testing of cattle, the statements of George Starr White were solemnly quoted as though they came from a reputable source and meant something.

From what has been said, it should not be difficult for any one with intelligence to recognize the fact that George Starr White is a quack who has commercialized the practice of medicine, who has no scientific standing and whose opinions on matters dealing with modern medicine are wholly without value.

Correspondence

THE PHYSICIAN AND DISABILITY INSURANCE

To the Editor:—Having become an "expert" on disability insurance by reason of a six and a half months' siege of malta fever, I thought I would pass on some of my "expertness" to your readers. Most physicians, myself included, seldom read their policies. They depend on agents to supply the proper protection. Since medical practice is a "one-man" business, physicians should carry enough health and accident insurance to keep the organization intact during the disability.

If a physician is a specialist he should list himself as such and not under the general heading of Physician and Surgeon. The surgeon in chief of one company stated that as the contract listed me as a physician and surgeon instead of an obstetrician and gynecologist, I could practice my profession if I could regulate it so as to be able to do office practice alone. In other words, I could write prescriptions and interview patients even if I could not deliver them. Therefore, I was partially disabled and not wholly disabled under the terms of the policy. Perfectly true, but where would the patients come from knowing that the physician was sick?

There are as many different clauses in life insurance policies as there are agents, it seems. I purchased what I thought was sufficient of this class of insurance. I supposed I had $500 a month coming from this source. I collected $130. Any disability clause which does not specify when total and permanent disability begins is hardly worth the premium since it is so difficult to define what total and permanent disability is. The best clause of this character I have seen reads in part as follows: "The company will pay monthly income and waive premiums when and if disability caused by bodily injury or

disease which wholly and continuously *prevents the insured from pursuing the occupation he is engaged in at the time* such disability occurs, and which shall have continuously so disabled the insured not less than ninety (90) days. (Subject to recovery provision below)."

Notice please the italics. That is quite different from policies reading "and will be permanently, continuously and wholly prevented thereby for life from pursuing any and all gainful occupations."

After studying the question for some time, I think the best accident and health insurance for the physician is the following:

1. For immediate needs, a commercial policy in which the rate is about $30 a year for each $25 weekly income.
2. Noncancelable health insurance with one, two and three months elimination clauses, or
3. Disability insurance in connection with the life insurance policy.

E. L. CORNELL, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PROPER AGE FOR REMOVAL OF TONSILS

To the Editor:—There seems to be considerable difference of opinion as to just how early in a child's life it is good policy to remove tonsils and adenoids. I would be pleased to have a résumé of prevailing opinions and few references. Kindly omit name.

M.D., Utah.

ANSWER.—The literature on the tonsil operation is so tremendous that it is difficult to find references that will give any sort of unanimity as to the time when it is advisable to remove tonsils and adenoids. However, it is certain that adenoids often do cause serious obstruction to breathing and may be removed almost any time after birth. During the first few months of life it is sometimes possible to avoid a definite operation by simply crushing the lymphoid mass with the finger. After the third or fourth month, it is best to give the child a light anesthesia and use a curet to remove the adenoid mass. The exact function of the tonsils is not known, but it has been considered advisable by most men not to remove them before the age of 3 unless indications are imperative. However, if they cause marked obstruction to breathing or there is frequent recurrence of infection accompanied by high temperature and marked cervical lymphadenitis, they may be removed at almost any age. It rarely happens, however, that these infections occur before the age of from 15 to 18 months. In many instances, serious tonsil trouble develops between 18 and 30 months of age and the tonsils may then be removed in the ordinary manner without any particular difficulty. Below the age of from 15 to 18 months, however, the operation is rather difficult because of the small size of the pharynx and operations at or before that period should be avoided whenever possible in the hope that serious complications, such as endocarditis and arthritis, will not develop before the child reaches the age mentioned. Then if the tonsillitis recurs, it is much easier to perform the operation. If tonsils cause serious trouble for the patient, they should be removed irrespective of age, just as one would remove a badly infected appendix without considering the exact age of the child. In other words, only badly infected and dangerous tonsils should be removed at any age.

PROPER SLEEPING POSITION FOR INFANT

To the Editor:—Kindly inform me whether it is generally accepted by pediatricians that the proper way for an infant to sleep is on its stomach. It seems to me that this prone position throughout the day would be injurious in that it would preclude full respiration. The constant effort of the infant to move out of the orthodox supine position, thus developing the ventral muscles, is too valuable an advantage to relinquish for a doubtful one. Please omit name.

M.D., California.

ANSWER.—The proper attitude during sleep is an individual one and is not frequently discussed. It is agreed that young infants, especially those showing muscular weakness, should not be placed on the abdomen to sleep because of the danger of suffocation. For older infants and children there seems little objection to this position as long as they are able to breathe easily and freely. Certainly a large number of older infants are observed to assume this position with little demonstrable ill effect. Muscular development is in most cases adequately taken care of during the time the infant is awake. Infants in their second year change their position readily.

USE OF ETHER INJECTIONS IN PERTUSSIS

To the Editor:—Could you give me any information regarding the value and technic of administration of ether hypodermically in pertussis? Please omit name.

M.D., Iowa.

ANSWER.—Ether is recommended in the treatment of whooping cough given intramuscularly (into the upper outer quadrant of the gluteal region, near the point of intersection of the lines marking this off) in doses of 1 cc. up to an age of 10 months, and 2 cc. for older children, on alternate days for three or four injections. As these injections are painful, the suggestion of giving the dose as a rectal injection of a 10 per cent solution in olive oil is worthy of consideration. It should have even better effect, for the sedative action of the ether is fleeting, unless proteotherapy from absorption of the protein of the muscle cells injured by the injection of the injected ether plays a part in the reported favorable results of the intramuscular injection.

EFFECTS OF EXPLOSIVE ACTION OF BULLETS ON TISSUE

To the Editor:—During the World War we heard a great deal about the explosive action of a bullet on bone and tissue. Will you please explain in detail just what is meant by this term.

M.D., Mo.

ANSWER.—Explosive action caused by a bullet in gunshots is a spreading or bursting destructive action and may be caused by a combination of any or all of the following factors, depending on whether the barrel from which the bullet is discharged is rifled or not:

1. The bullet carries with it pieces of outer clothing and soft parts of the body, which are thereby endowed with the bullet's velocity. This mass enlarges the transverse diameter of the spreading, penetrating mass and gives an explosive effect to the penetration.

2. Its momentum forward, when striking increased resistance of parts of the body, tends to be resolved into different forces at angles to the main axis of the trajectory, thereby causing spreading or explosive action on tissues.

3. The twist of the bullet, that is, its rapid rotation acquired by passing through a rifled barrel, adds a distinct explosive character to the effect of the bullet. If the parts penetrated are semisolid or soft, as brain, this material surrounding the bullet acquires the rotatory spin of the missile and tends to be scattered by centrifugal action, like the water in the wet cloth drying in the centrifugal drier.

4. The character of the nose of the bullet has a bearing on its explosive result on tissues. If soft, so that the nose spreads, as in dumdum bullets, by the time the missile has traversed a moderate diameter of human tissues it becomes greater in diameter, has conveyed its velocity to much surrounding tissue, and leaves the human parts causing a gaping hole from which some tissue is dragged. This is popularly called explosive effect and finds verification in any bullet wound in which the wound of entrance is small and slitlike, whereas the wound of exit is large, gaping and ragged, and causes loss of tissue.

5. The velocity of the bullet has a bearing on its explosive effect in two ways:

(*a*) High velocity causes widespread effect on near lying tissues, causing their destruction and loss of identity, as in the brain, which may lead to fatal consequences.

(*b*) Slow velocity and tumbling bullets, those lazily turning over in the tissues because their velocity is not great enough to carry them sharply on through, cause great damage. This results from the lighter, conical shaped point being turned by the heavier and broader base of the missile, leading to great increase in transverse diameter and greater destruction of tissue during the act of penetration. Such results come from bullets nearly spent or those which have ricocheted and acquired a tumbling motion.

Those interested in this action on bones may consult articles by Dr. Kellogg Speed entitled "The Mechanism of Gunshot Wounds in Projectile Fractures of Long Bones: A Comparative Mechanical Study" (*Ann. Surg.* **71**:493 [April] 1920); "Gunshot Fractures of the Skull" (THE JOURNAL, May 5, 1917, p. 1299); "Gunshots of the Head: Especial Reference to Indications for Operation and Technic" (*Surg. Clinics* Chicago **2**:79 [Feb.] 1918); "Immediate Surgery of Gunshot Wounds of the Cranium," reviewing forty-six recent craniotomies (*Surg. Gynec. Obst.* **26**:396 [April] 1918).

ANGINA PECTORIS

To the Editor:—A woman, aged 33, highly neurotic, the mother of two children, an uneventful survivor of a cesarean section and vaginal plastic operation, has been suffering fairly typical attacks of angina pectoris since the normal birth of her first child thirteen years ago. During her attack there is absolutely no change in the pulse rate; quality of the heart sounds, temperature, blood pressure or blood count. The blood chemistry and urine are normal; the Wassermann reaction is negative; the electrocardiogram is normal. The attack is not relieved by amyl nitrite, glyceryl trinitrate or the other ordinary medications. Morphine or codeine, the phenobarbital group, and even bromides bring on a peculiar somnolence, characterized by twitchings, very severe restlessness, carphology, and delirium that lasts for at least twelve hours. Recently, pantopon has been tried hypodermically on two successive occasions with fair results. An attack and its sequelae, which consist in perhaps twenty minor attacks during twenty-four hours, lasts at least three or four days. Please advise as to diagnosis and especially therapy. Kindly omit name.

M.D., New York.

ANSWER.—Angina pectoris at 33 does occur, but demands a careful review of the history and symptoms. There are at no age any objective observations on which a diagnosis can be based, either during the attacks or at other times. Such pain may be caused by cardiac or mediastinal disorders, not always easily demonstrable. Among such conditions may be mentioned syphilis of the heart or aorta, aortitis due to other organisms, as a streptococcus, mediastinitis or other mediastinal conditions, or adhesive pericarditis. Coronary sclerosis has been known to occur at an early age, and other coronary lesions must be ruled out. Anginal pain may occur without any pathologic changes, as the result of an active vasoconstriction of the coronaries. It is more usual later in life, but it may occur earlier when there is an autonomic nervous system that has a lowered threshold to normal stimuli and overresponds to such stimuli, as is seen in the so-called effort syndrome.

Anginal pain that does not respond to glyceryl trinitrate is doubtful. Gas in the splenic flexure of a spastic colon, or elsewhere, may cause similar pain, especially in a highy neurotic woman of 33 without objective manifestations.

Narcotics should not be used, and milder hypnotics only cautiously. The bowels should be kept open without any cathartics or enemas, and the diet should not contain indigestible residue, which would stimulate the bowels mechanically. The bowels may be kept open with liquid petrolatum or, better, petrolatum; of the latter, a tablespoonful night and morning, the dose being decreased after a week or so, when it begins to have effect. Three or four glasses of hot water on arising will help a great deal to keep the bowels open. The spasm of the large bowel may be relieved by atropine or belladonna in doses small enough not to cause discomfort.

Causative factors in the chest should be sought for carefully, and a thorough roentgen examination made.

Anginal pain is best relieved by the use of the purine-base diuretics. In a neurotic person it would be best to start first with those least likely to cause gastric disturbance, as theobromine calcium salicylate or theophylline-ethylenediamine, changing if desirable to the other theobromine salts later.

CONVALESCENT SERUM IN POLIOMYELITIS—RESPIRATORY PARALYSIS

To the Editor:—At present, in poliomyelitis, convalescent serum is given only if the patient is seen twelve hours or less after the appearance of the first paralysis. On what work is this time element based? There are two types of respiratory paralysis in poliomyelitis: one of the respiratory center and the other when the nuclei of the phrenic and intercostal nerves are paralyzed. In cases in which there are no other bulbar lesions, how can the two be differentiated? Is the antibody content of the spinal fluid as high as that of the serum of patients convalescing from poliomyelitis? Please omit name.

M.D., New York.

ANSWER.—Convalescent serum should be given as early as feasible in order that damage to the structures in the central nervous system may be checked as promptly as ever possible. There is no hard and fast rule for giving convalescent serum within twelve hours after the appearance of paralysis, but the earlier the serum is given the better. It stands to reason that serum, even if given later than twelve hours after the onset of paralysis, may still have beneficial effect. The indications are that the spinal fluid does not contain as much antibody as the serum of convalescent patients, but exact observations on this point are not available.

The respiratory palsies in poliomyelitis may be grouped as follows in relation to the site of the lesions:

1. Thoracic cord lesion with paralysis of intercostal muscles. If unilateral and localized there is little or no respiratory distress, but inspection will show that the breathing is mainly diaphragmatic in the case of bilateral thoracic paralysis, or weaker on one side if unilateral. Note alternate bulging and retraction of intercostal spaces.

2. Cervical cord lesion affecting phrenic nerve centers (third and fourth cervical segments). If unilateral, recognition may be difficult. If bilateral, breathing is wholly thoracic; the epigastrium does not bulge normally; the abdominal viscera are pushed upward. The edge of the liver does not move down with inspiration. There need not be dyspnea in the recumbent position, but it appears on movement.

3. Bulbar lesion affecting vagus nuclei. Dyspnea and cyanosis are more marked than in case of phrenic or intercostal paralysis, and practically always associated with other "bulbar" paralysis, as of the pharynx, larynx and tongue.

4. Acute ascending (Landry's) paralysis, with successive intercostal, phrenic and bulbar paralysis.

SUPPLY OF PHENOBARBITAL

To the Editor:—I have in mind a physician who writes for phenobarbital and phenobarbital sodium. When this product is ordered of jobbers, they invariably supply luminal. This is too expensive, and I thought that perhaps you can supply the name of a manufacturer so that we can get what we want. W. A. LENROW, PH.G., Dumont, N. J.

ANSWER.—Phenobarbital is the name given by the Revision Committee of the U. S. Pharmacopeia for the product introduced as luminal. It is encouraging to note that physicians are increasingly using the scientific name, phenobarbital. The correspondent is quite correct, however, that jobbers supply luminal on orders for phenobarbital-U. S. P. This, in the past, has been the only thing which they could do, as the Winthrop Chemical Company, proprietors of luminal, own the patent for this substance. The patent expires, however, May 7, 1929. Several manufacturers apparently are already preparing to put nonproprietary brands of phenobarbital-U. S. P. on the market after that date—which, of course, will be sold under the official name.

CHILDREN WHO CRY AT NIGHT

To the Editor:—A patient of mine, aged 3 years, has cried at some time during the night almost every night since birth. He seems to be perfectly well during the day. He was delivered normally after a short labor. His general physical examination is negative except that his anterior or cervical glands are occasionally enlarged. His legs are well developed and he has neither pronated nor flat feet. Since he has been able to talk he has complained of pains along the posterior surface of his legs from the ankle to the knee. Hot applications and massage relieve the pain. What is your opinion as to the cause of this condition, and what would you suggest as to treatment? Please omit name.

M.D., West Virginia.

ANSWER.—Rheumatism and fallen arches are probably the two most frequently encountered explanations for pains as described. The presence of swollen cervical glands at intervals suggests the probability of tonsillar or pharyngeal infection. Careful examination of the tonsils and palpation of adenoid growths between and at the time of the adenitis is essential. If there is evidence of infection present in these structures, their removal should be seriously considered. The age is not a contraindication if removal is indicated. Salicylates might be given a trial.

A Pirquet test and a blood Wassermann test should be made. Roentgen examination of the lower extremities might be of value in ruling out the presence of joint or bone disease.

It is taken for granted that the child has been on a balanced diet with sufficient vitamins. Calcium medication suggests itself if the other observations are negative. Calcium chloride in doses from 1.3 to 2.6 Gm. (20 to 40 grains) daily might be tried well diluted or in milk. Observation of the child's mental reactions outside the home would be interesting.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Portland, Ore., July 8, and Philadelphia, Oct. 21, 1929. Sec., Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

ARKANSAS—Homeopathic: Little Rock, May 14, 1929. Sec., Dr. Allison A. Pringle, Homeopathic Board of Medical Examiners, Eureka Springs, Ark.

NEBRASKA—Basic Science: Lincoln, May 14-15, 1929. Chief, Mrs. Clark Perkins, Bureau of Examining Boards, State House, Lincoln.

NEVADA: Carson City, May 6-8, 1929. Sec., Dr. Edward E. Hamer, Board of Medical Examiners, Carson City, Nev.

Book Notices

CHIRURGISCHE KRANKHEITEN IM KINDESALTER MIT BESONDERER BERÜCKSICHTIGUNG DER EINSCHLÄGIGEN PÄDIATRISCHEN FRAGEN. Von Erwin Gohrbandt, a. o. Professor an der Universität, Berlin, Paul Karger, Privatdozent für Kinderheilkunde, und Ernst Bergmann, Assistent an der chirurgischen Universitäts-Klinik der Charité in Berlin. Paper. Price, 65 marks. Pp. 916, with 433 illustrations. Berlin: S. Karger, 1928.

This new monograph on the surgical diseases of childhood pays particular attention to the related pediatric questions and is unique in the fact that it is the product of the joint work of two surgeons and a pediatrician. The authors have considered every question from the standpoints of pediatrics and of surgery. In their experience they found that certain questions recurred frequently and they have attempted to present the answers to these. Questions relating to malformations were frequent, and this subject has been covered at length. While there was a certain division of authorship in the various portions of the different chapters, each was jointly edited so as to avoid any conflict of advice. Only in a few instances has the point of view of the authors been irreconcilable, and in these cases each has presented his point of view and has allowed the choice of method to the reader. The chapters dealing with surgery of the extremities and orthopedic surgery are the individual contribution of Bergmann. The conclusions are based primarily on work done in the clinics and only secondarily on the literature. References to the literature include none after the beginning of 1927. Discussions of operative technic are limited chiefly to principles involved, and readers are referred to the special literature for details of technic, except in the case of malformations. Here details of operative technic are given. Minor surgery which the general practitioner is called on to undertake is described in detail. The authors point out just which cases should be sent to the hospital for surgical care. Pediatric questions have been discussed extensively where this knowledge is important for the surgeon who is unable to obtain this type of assistance. This is one of the most important aspects of the work and has been extremely well performed. It is probably just this treatment of the subject which gives the volume its unique character and makes it a most valuable contribution to pediatric surgery. The text is greatly enhanced by photographs of actual cases, roentgenograms, diagrams, and drawings of operations. The book is divided into three main parts. The first deals with general subjects, such as the treatment of infants in the surgical clinics; weak constitutions in childhood as contraindications for surgical intervention; blood transfusion; the acute infectious diseases of children; the infectious granulomas; advice concerning prescription of medicine for children; anesthesia, and the general technic of operation on children. The second is the special portion and discusses surgical diseases regionally, beginning with the head. The third deals with surgery of the extremities and orthopedic surgery. In addition to the valuable bibliography at the end of each chapter there is an introductory list of collateral reference works and textbooks. This is divided into two parts, the first listing books on pediatric literature, and the second books on surgery, operative surgery and orthopedics. The material is excellently presented, down to date and practical. The volume is a distinct addition to the literature on the surgery of childhood.

THE CLIMACTERIC. (THE CRITICAL AGE.) By Gregorio Maranon, Professor of Medical Pathology in the Madrid General Hospital. Translated by K. S. Stevens. Edited by Carey Culbertson, A.B., M.D., F.A.C.S., Associate Clinical Professor of Obstetrics and Gynecology, Rush Medical College. First American edition from second Spanish edition. Cloth. Price, $6.50. Pp. 425, with 18 illustrations. St. Louis: C. V. Mosby Company, 1929.

The author first defines his thesis and differentiates between the symptom, menopause, and the epoch, climacteric. The latter, he states, is not merely the cessation of the menses, but a critical age due to a complex endocrine crisis. Three fundamental glandular elements enter into the development of the crisis: the genital, the thyroid and the suprarenal. The rôle of the pituitary is secondary. The author devotes a chapter to each of these endocrine factors, treating the subject in an understandable and interesting style. The appended notes by Culbertson also add to the value of the text. The relationship of the vegetative nervous system and of emotion to the climacteric are especially well discussed. Concerning the limits of the critical age, Maranon states that while there is no chronological relationship between the beginning and the end of menstrual life there is a relationship to the vigor of the ovaries. Women with active ovaries are likely to experience early puberty and late menopause. He discusses at length the factors that may modify the time of menopause, such as disease, sex life, celibacy, and social conditions. Here one finds an occasional statement that tends to throw a shadow of doubt on the accuracy of the author's observations, as on page 112 one reads, in a case report, "At autopsy typical lesions [of syphilis] were found in the ovaries and an advanced state of sclerotic degeneration." It is doubtful whether typical syphilitic lesions are demonstrable in the ovaries. For the most part, however, the book is a most interesting and valuable study of the climacteric, based on many years of critical observation and experimentation on the part of the author and an intimate knowledge of the literature. It is a work of importance not only to the specialist but also to the general practitioner. In fact, Maranon states in the preface to the first edition that he conceived the book from the general practitioner's point of view and for all physicians. The book is well put up in large type and printed on a good grade of paper. The text is free from errors and the translation so well done as to obscure its foreign source. An ample bibliography accompanies the text.

METHODS OF BIOLOGICAL ASSAY. By J. H. Burn, M.A., M.D., Director of the Pharmacological Laboratory of the Pharmaceutical Society of Great Britain. With an introduction by H. H. Dale, C.B.E., R.S., M.D. Cloth. Price, $2.55. Pp. 126, with 22 illustrations. New York: Oxford University Press, 1928.

This essentially practical little book is especially to be commended for its emphasis on the guiding principles of biologic assays, as well as for its painstaking description of methods. According to the dictum endorsed by Burn, that "there is no scientific justification for a minimum lethal or systolic dose of any toxic substance or drug," most of the biologic assays incorporated in the U. S. P. X will have to be modified. Thus, for digitalis the smallest dose that will kill all frogs is no less than 4.8 times as big as that enough to kill some frogs. It is recommended that, in place of a minimum lethal dose, the conception be established of an average or "median" dose which will produce the effect in 50 per cent of animals. If, for instance, this dose of digitalis is given the value of 4, then a dose corresponding to 2 will kill 5 per cent, and a dose corresponding to 6 will kill 100 per cent. The average or median dose will give more nearly comparable results than a dose at either extreme. Furthermore, any such determination is of value only when directly compared at the time of the assay with a standard sample as a control on a particular group of animals under exactly the same conditions. The standard for digitalis must be digitalis, not ouabain, the latter being only a suitable standard for strophanthus. In addition to the assay for drugs of the digitalis series, the book features the assay of pituitary posterior lobe, insulin, arsphenamine, ergot, ovarian and parathyroid hormones, and epinephrine.

LICHTWIRKUNG UND ANTIRACHITISCHER SCHUTZSTOFF IM LEBENDEN ORGANISMUS. Experimentelle und klinische Untersuchungen zur pathologischen Physiologie der Rachitis als Mangelkrankheit. Von Privatdozent Dr. Curt Falkenheim. Paper. Price, 9.80 marks. Pp. 131, with illustrations. Berlin: S. Karger, 1928.

The author presents the various theories that have held sway with regard to the cause of rickets, gradually leading up to the modern discovery of the direct effect of light and the indirect effect of the same agent through food materials. He then presents his experimental work, in which he claims to have demonstrated that: (1) skin becomes antirachitically activated by exposure to a quartz mercury vapor lamp, and this activity is in part transposed to the nonexposed areas; (2) antirachitically activated skin can exert its effect parenterally when implanted in another part of the body; (3) exposure of the animal to ultraviolet radiation leads to an increase in vitamin D content of the internal organs, such as the liver; (4) splenectomy has no effect on the production or the cure of rickets; (5) the ultraviolet irradiation of a lactating animal such as the cow produces an increase in the rickets-preventing properties of the milk; (6) cows out on pasture in August and Sep-

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tember also produce milk that has decided rickets-preventing properties, but milk from such animals is not as rich in vitamin D as that produced under the action of the quartz mercury vapor lamp; (7) milk from cows exposed to ultraviolet radiation is much richer in calcium; (8) milk irradiated directly, then saturated with carbon dioxide and pasteurized, is strongly antirachitic when used on infants and also in rat feeding tests; (9) a similar enrichment of milk in vitamin D can undoubtedly be effected by the use of irradiated ergosterol, remaining for further experimentation to determine; (10) milk pasteurized in a carbon dioxide atmosphere is still definitely antirachitic after having been kept in storage for a period of five and one-half months, and dried milk kept for five and one-half months is also definitely rickets-preventing; (11) the disposition of young rats for induction of rickets allows itself to be influenced by the irradiation or feeding of the mother. On the whole, the monograph represents a valuable literary contribution, but from the experimental standpoint it offers little that is new. In many respects the author shows considerable lack of familiarity with the work of American investigators. The organization of the work is excellent and the bibliography should be valuable to those who are interested.

DISEASES OF THE MOUTH. By Sterling V. Mead, D.D.S., Professor of Oral Surgery and Diseases of the Mouth, Georgetown Dental School. Third edition. Cloth. Price, $10. Pp. 727, with 336 illustrations. St. Louis: C. V. Mosby Company, 1928.

This book is a complete treatise on the diseases of the mouth; the attempt has been made to include every pathologic condition found in the mouth either as a local lesion or as a manifestation of disease elsewhere. Its broad scope precluded the possibility of more than brief reference to many conditions that might otherwise have been discussed more at length. In view of the fact that Dr. Mead is a teacher of both medical and dental students, it appears to be a book intended to give the physician a knowledge of conditions familiar to the dentist, and the dentist a similar knowledge of those mouth conditions which are usually considered to be within the field of the physician or surgeon. There are extensive bibliographic references for each chapter. The first five chapters are devoted to mouth examinations, which include general directions for a complete physical examination. Chapters VI to XVI cover what might be termed the field of the general practitioner of dentistry, including dental caries and other diseases of the hard structures of the teeth, dentition, abnormalities, malocclusion, unerupted teeth, the saliva, pyorrhea and alveolar abscess. Chapters XVII to XXIV cover the mouth manifestations of specific infectious diseases, infections of the floor of the mouth, diseases of blood vessels and nerves, and diseases of the lip, tongue, throat and salivary glands. Chapters XXV to XXXIV cover mostly the field of the oral surgeon, including diseases of the maxillary sinus, cleft palate, injuries and diseases of the maxillary bones, tumors and cysts. Under the heading of stomatitis, seventy-two conditions are cited as local or as mouth manifestations of lesions elsewhere. The illustrations are generally well chosen and add much to the value of the book. The more strictly dental diseases are treated rather superficially, and the book is of especial value to the dentist because of its fuller consideration of other lesions with which he is not so familiar. For the specialist in oral surgery, this is a most valuable book.

L'ÉLECTRO-DIAGNOSTIC. Par P. Duhem, électro-radiologiste de l'hôpital des Enfants-Malades. Préface de M. le Dr. A. Souques. Paper. Price, 25 francs. Pp. 132, with 20 illustrations, and 7 plates in a separate folder. Paris: Gauthier-Villars, 1928.

This monograph, one in the series of books on modern physical therapy, gives a concise and practical account of classic as well as modern electrodiagnosis. The first part presents the old method apparatus, the technic, the physiologic effects of the galvanic and faradic current, the abnormal electrical reactions, the voltaic vertigo. One can follow the progress accomplished since Duchenne, the father of electrodiagnosis: the addition of the galvanic to the faradic test, the substitution of the bipolar for the unipolar test. The qualitative changes and observations on the reaction of degeneration are clearly presented. The second part deals with the new method, based on the time factor in response, called the chronaxie, and with the researches for its measuring and with its study from the physiologic and pathologic points of view. The valuable tables of Bourguignon are presented. Duhem corroborates the opinion of the leading investigators that, in the majority of cases, the older method gives sufficient results. It is not infallible, as the French school has pointed out. The new method gives unquestionably more complete and more exact results in cases in which the older method is silent, notably in the myopathies; but then again it is a complicated laboratory method and not as yet suited to the daily needs of the physical therapy clinic. In the third part of the volume, Duhem analyzes the electrical reactions of the central and peripheral nervous system and of the myopathies. He presents here his original research on electrodiagnosis in infantile paralysis and facial paralysis, and shows the inexactness of Erb's old aphorisms. The final part consists of a description of the motor points and of the motor reactions obtained by their excitation. It is illustrated by an excellent table and drawings. As Duhem correctly remarks, electrodiagnosis is always a difficult examination; it demands time, patience and exactness in details. It also demands a profound knowledge of the anatomy and physiology of the nervous and muscular systems. Duhem believes that the present French system whereby medical electrology and electroradiology are practiced together is wrong because as its result electrology is considered an accessory science and its study is not taken seriously. Radiology is of enough importance to be the main object of a physician's life work. Electrology is of such capital importance in the diagnosis and prognosis of the organic and functional disorders of the nervous system that every electroradiologist of a hospital should have had effective service in a special department of neurology.

INTRODUCTORY THEORETICAL CHEMISTRY. By G. H. Cartledge, Associate Professor of Chemistry, the Johns Hopkins University. Cloth. Price, $3.60. Pp. 553, with 71 illustrations. Boston: Ginn & Company, 1929.

In 1925 THE JOURNAL made favorable comments in its review of the then new "Inorganic and Physical Chemistry" by this author. The same compliments could be paid to the present volume if it were really new or if it frankly made the statement that it was a second and more complete edition of the original work under another name. There is not sufficient difference to warrant loading up the book-shelf with two volumes each bearing a name of its own, when one volume under one name would do. Otherwise, for one who does not have the book issued in 1925 the present volume, as in the case of the first, will serve as an excellent compendium of physical chemistry.

DAS PERMEABILITÄTSPROBLEM; SEINE PHYSIOLOGISCHE UND ALLGEMEIN-PATHOLOGISCHE BEDEUTUNG. Von Ernst Gellhorn, Dr. Phil. et Med. a. o. Professor der Physiologie an der Universität Halle a. S. Bd. 16—Monographien aus dem Gesamtgebiet der Physiologie der Pflanzen und der Tiere. Herausgegeben von M. Gildemeister und anderen. Paper. Price, 34 marks. Pp. 441, with 42 illustrations. Berlin: Julius Springer, 1929.

This dissertation on what is probably the most fundamental of all the phenomena exhibited by living organic matter, the permeability of cell membranes and of colloids in general, is both technical and profound. The sentences are needlessly long, the phraseology involved. An elaborate consideration of literature is skilfully interwoven with results of the author's extensive investigations. About 1,200 references occupy forty-six pages at the end. Following an introduction and description of methods that have been used to ascertain the permeability of protoplasm, a general part is occupied with permeability of the cell and a special part with permeability of organs. These are followed by a summary and review of various theories, the lipoidal, adsorption and ultrafiltration theories, and those of the colloidal chemists involving dispersion systems of anhydrous and hydrophilic colloids. The treatise consequently belongs to general physiology. It abounds with tables and references to American and English investigators. It is compact and comprehensive. It will have a place with such works as Höber's Physikalische Chemie der Zelle und der Gewebe, Loeb's Dynamics of Living Matter, Lillie's Protoplasmic Action and Nervous Action, and similar works. In the preface the author states that it is the fruit of critical studies made in connection with his own investigations. It also resembles books written as the culmination of repeated endeavors to present in lectures complete reviews of special topics. To many the absence of formulas of higher mathematics used by physical chemists to explain vital processes will make the work more comprehensible.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

AN INTRODUCTION TO BIOPHYSICS. By David Burns, M.A., D.Sc., Professor of Physiology in the University of Durham. With a foreword by Prof. D. Noël Paton, M.D., LL.D., F.R.S. Second edition. Cloth. Price, $7. Pp. 580, with 116 illustrations. New York: Macmillan Company, 1929.

Highly technical textbook explaining actions of light, of colloids, and of a physical nature generally.

IMPERATIVE TRAUMATIC SURGERY WITH SPECIAL REFERENCE TO AFTER-CARE AND PROGNOSIS. By C. R. G. Forrester, M.D., F.A.C.S., Consultant, Teaching Staff, Illinois Post-Graduate School. Cloth. Price, $10 net. Pp. 464, with 598 illustrations. New York: Paul B. Hoeber, Inc., 1929.

The nearest American approach to Lejar's "Urgent Surgery."

THE STORY OF MODERN PREVENTIVE MEDICINE: Being a Continuation of the Evolution of Preventive Medicine, 1927. By Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P. Cloth. Price, $4. Pp. 295, with 10 illustrations. Baltimore: Williams & Wilkins Company, 1929.

Explanations by the noted British health officer of modern preventive medicine.

BELIEVE IT OR NOT! A Modern Book of Wonders, Miracles, Freaks, Monstrosities and Almost-Impossibilities. By Robert L. Ripley. Cloth. Price, $2. Pp. 172, with illustrations. New York: Simon & Schuster, Inc., 1929.

A collection of freak notions, ideas, customs and facts from all over a freaky universe.

MEDICAL AND ALLIED TOPICS IN LATIN POETRY. By Heinrich Oppenheimer, D.Lit., LL.D., Ph.D., of the Middle Temple, Barrister-at-Law. Cloth. Price, 30s. net. Pp. 445. London: John Bale, Sons & Danielsson, Ltd., 1928.

Highly interesting presentation of medical references in the Latin poets with good English translations.

A SHORTER ANATOMY, WITH PRACTICAL APPLICATIONS. By E. Wolff, M.B., B.S., F.R.C.S., Demonstrator of Anatomy, University College. Cloth. Price, $6. Pp. 451, with 130 illustrations. New York: William Wood & Company, 1929.

Well printed and fully illustrated brief guide to anatomy.

YOUR EYES AND THEIR CARE. By Edgar S. Thomson, M.D., Surgeon-Director, Manhattan Eye, Ear and Throat Hospital. Cloth. Price, $1.50. Pp. 175, with 11 illustrations. New York: D. Appleton & Company, 1929.

Another popular guide to the care of the eyes which in most instances need but little if an ophthalmologist sees them once in a while.

ANATOMY AND THE PROBLEM OF BEHAVIOUR. By G. E. Coghill. Lectures Delivered at University College, London. Cloth. Price, $3. Pp. 113, with 52 illustrations. New York: Macmillan Company, 1929.

Attempt in a brief monograph to explain why we do what we do when we do it.

YOU — AND THE DOCTOR. By John B. Hawes 2d, M.D. Cloth. Price, $2. Pp. 181. Boston: Houghton Mifflin Company, 1929.

A readable household medical guide discussing safely the things that can be safely discussed.

MARRIAGE IN THE MODERN MANNER. By Ira S. Wile, and Mary Day Winn. Cloth. Price, $2. Pp. 285. New York: Century Company, 1929.

Sound essays, some already printed in *Hygeia*, on the marriage problem.

YEAR BOOK OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1926. Volume XV. Containing the Sixty-Ninth Annual Report on the Progress of Pharmacy, and the Constitution, By-Laws and Roll of Members. Corresponding to Volume Seventy-Four of the Former Proceedings of the American Pharmaceutical Association. Cloth. Pp. 613. Baltimore: American Pharmaceutical Association, 1928.

THE NOTIFIABLE DISEASES: Prevalence During 1927 in Cities of 10,000 to 100,000 Population. Supplement No. 72 to the Public Health Reports. Paper. Price, 15 cents. Pp. 94. Washington, D. C.: Supt. of Doc., Government Printing Office, 1929.

POPULAR SCIENCE TALKS. A Series of Popular Lectures on Twelve Interesting Topics. Volume VI. 1926-1927. Paper. Price, $1. Pp. 249, with illustrations. Philadelphia: Philadelphia College of Pharmacy and Science, 1929.

Medicolegal

Testamentary Capacity and Adjudication of Insanity

(Houston v. Grigsby (Ala.), 116 So. 686)

The appellee's testatrix, Irena Grigsby, was declared mentally unsound, Sept. 13, 1926. About four months later, and about two months before her death, she executed her will, the basis of this contest. She died, Feb. 3, 1927. The will was contested by the appellant, Houston. From a judgment of the circuit court admitting the will to probate, the contestant appealed to the supreme court of Alabama. The law, said the appellate court, presumes that every person of full age has mental capacity sufficient to enable him to make a will. It casts on the contestant the primary burden of proving mental incapacity when the will of such a person was executed. But when the contestant has proved fixed, habitual or permanent insanity, as distinguished from spasmodic or temporary insanity, prior to the making of the will, the burden of proof is shifted to the proponent, and he must show that the will was executed during a lucid interval. We think, said the court, proof of the adjudication of insanity and that the deceased was under the guardianship of the probate court when she executed the will was sufficient to cast on the proponent the burden of establishing testamentary capacity when the will was made; but the adjudication is conclusive of insanity only at the time of the inquisition and not prior nor subsequent to that time.

A nonexpert witness cannot give an opinion as to the sanity or insanity of a person unless the witness has had an intimate acquaintance with her. The fact that nonexpert witnesses offered in this case did not see as much of the deceased after she had been adjudged insane as they saw of her before went only to the probative force of their opinions. Moreover, said the court, the rule as to the competence of witnesses called on to testify to the sanity of a person is not so exacting as it is with reference to those called on to prove insanity.

The trial court, at the request of the proponent of the will, instructed the jury that if the deceased, when she made her alleged will, knew in general what her property was, knew who the people were who were named in it, and knew what the making of a will was, they could not find the will invalid by reason of unsoundness of mind, even though the deceased had been adjudged to be of unsound mind. This fell short of laying down the proper rule as to testamentary capacity, stated in *Taylor* v. *Kelley*, 31 Ala. 59, 68 Am. Dec. 150. It was error to give such an instruction. The judgment of the trial court was reversed and the cause remanded.

Workmen's Compensation: Disease and Accidental Death

(Southern Cement Co. v. Walthall (Ala.), 117 So. 17)

The appellee's husband, 58 years old, received a head injury in the course of his employment, June 14, 1926. About August 21 following, he suffered a stroke of apoplexy, with paralysis of the left side, from which he died about August 31. The widow, the appellee in this case, as administratrix of the estate of her deceased husband, instituted proceedings under the workmen's compensation act to recover compensation on account of her husband's death. Judgment was rendered awarding compensation. The employer, by certiorari, brought the case before the supreme court of Alabama.

The trial court found that the injury to the decedent's head "produced, as a proximate consequence thereof, a cerebral hemorrhage, bringing about the paralysis and final death," and that at the time of his death the deceased was suffering from arteriosclerosis. The court found further, however, that the death "resulted as a proximate consequence of the accident of June 14, 1926, solely and independently of said arteriosclerosis." On behalf of the employer, the appellant in this case, it was contended that the deceased workman died of paralysis, the result of apoplexy, and not from an accident arising out of the course of his employment. It was contended further that, under the laws of Alabama, the defendant was in any case liable only for the disability that would have resulted from the

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accident if the deceased was not suffering from arteriosclerosis. The medical testimony as to the cause of death was conflicting. The testimony of two physicians examined in the trial court on behalf of the employer tended strongly to support the conclusion that death was due to a long standing and far advanced arteriosclerosis, culminating naturally and inevitably in a fatal cerebral hemorrhage. Other testimony, however, supported the finding that the blow or blows on the workman's head proximately caused the fatal hemorrhage two months later. In arriving at this conclusion, a medical witness for the plaintiff called attention to the fact that there had been no previous symptoms of high blood pressure and that there had been continuous symptoms in the head, in the region of the injury, up to the time of death. There was evidence, then, said the appellate court, to sustain the finding of the trial court that the blow or blows were the proximate cause of death.

The appellate court held, however, that the Alabama statute providing for the apportionment of liability in cases in which the injured workman was suffering from a preexisting injury or disease at the time of the accident had no application in a case in which the claim was based, not on disability, but on death. Section 7561 of the Alabama Code provides:

> If the degree or duration of disability resulting from an accident is increased or prolonged because of a preexisting injury or infirmity, the employer shall be liable only for the disability that would have resulted from the accident had the earlier injury or infirmity not existed.

The apportionment of liability is thus referable to a state of disability but not to death. "Disability" and "death" are distinct conditions, so recognized throughout the compensation law, and death cannot be included in "disability" as used in the law. The statute authorizing the apportionment of liability is thus not applicable to cases based on deaths, as distinguished from cases based on disability. The petition for certiorari was therefore denied and the judgment of the court below was affirmed.

Insane Delusion as Affecting Testamentary Capacity: Books as Evidence

(Batson et al. v. Batson et al. (Ala.), 117 So. 10)

This suit was instituted to contest the validity of a will, on the ground that the testator was suffering from an insane delusion. The circuit court gave judgment for the contestants, from which an appeal was taken to the supreme court of Alabama. The evidence tended to show that the testator erroneously thought that his son, one of the contestants, had defrauded him in a business transaction, that he undertook to assault his son on the streets and in his office, and at one time threatened to kill him; that whenever his son's name was mentioned, he lost control of himself, shook and trembled, and cursed; that he became careless and indifferent about his dress, and wore a straw hat and canvas shoes in the winter time. After examining this evidence, the supreme court said that the jury was warranted in finding against the validity of the will. If one against all evidence and probability persistently believes supposed facts which have no existence except in his perverted imagination, and conducts himself, however logically, on the assumption of their existence, he is, so far as they are concerned, under an insane delusion. *Re Riordan's Estate*, 13 Calif. App. 313, 109 Pac. 629. The rule is well established that where there is an insane delusion in regard to one who is an object of the testator's bounty, which causes him to make a will which he would not have made but for that delusion, such will cannot be sustained. Objection was made to the introduction of evidence showing the mental disorders of other members of testator's family. The supreme court said that, on questions of insanity, proof of hereditary insanity is competent and that it may be shown that other members of the testator's family were afflicted with a mental disease like that of the testator and of a nature to be inherited. Objection was also made to the introduction in evidence of several chapters of a manual of insanity. This was not error, the court said, since it was made relevant by a medical expert, to whom the book was shown, who testified that it was recognized as a very good book on mental diseases and insanity, although it was a bit old. The supreme court could find no error in any ruling of the circuit court and therefore affirmed the judgment.

Contract Between Physician and Injured Workman

(Kennedy v. Dzengielowski et ux. (N. Y.), 228 N. Y. S. 435)

The defendant injured his foot in the course of his employment. Some time later he applied to the plaintiff for treatment. The plaintiff sued the workman and his wife for money due, and a verdict was rendered in his favor for $692. The case came up in the present instance in the Oneida County Court on a motion of the defendant to set aside the verdict and for a new trial. The defendant had obtained an award under the workmen's compensation act for $800. The plaintiff's bill was considered by the industrial board at that time but apparently was not allowed. In support of his motion to set aside the verdict and for a new trial, the defendants claimed that as this was a "compensation case" the industrial board had exclusive jurisdiction in providing for the payment of the plaintiff's bill, and that the court was therefore without jurisdiction. The court was unable to find any evidence to show that the defendant, before seeking the services of the plaintiff, made any demand on his employer for medical attendance. The patient and his wife themselves, without making such demand, employed the plaintiff and promised to pay him. The statute provides that if the employer fails to provide medical attendance after request by the injured employee, the employee may provide such attendance at the expense of the employer. It provides, too, that all fees and other charges for such treatment and services shall be subject to regulation by the commissioner. The defendants claimed, therefore, that no one but the commissioner had jurisdiction to regulate or allow any physician's services. But, said the court, the jurisdiction of the commissioner arises only when a claim is within the provisions of the statute, and this claim is not. It is only when the employer refuses or neglects to furnish medical attendance or treatment that the cost of it can be recovered as a part of the employee's compensation for his injury. By an amendment to the statute in 1927, it was provided that all fees and other charges for treatment and services, whether furnished by the employer or otherwise, should be subject to regulation by the board. This amendment was not in effect when the present case arose, but, said the court, even assuming that it was in effect, the court would assume that it referred and applied only to cases within the statute; namely, cases in which the statutory steps had been followed. Since the employee, the defendant in the present instance, did not make any demand on his employer and was therefore outside the provisions of the workmen's compensation act, he was bound by his contract, and the judgment against him in favor of his physician must stand.

Accuracy Required in Alleging Injuries

(South Plains Coaches, Inc., v. Behringer (Texas), 4 S. W. (2d) 1003)

Injuries must be specifically alleged. Evidence of injuries other than those alleged is not admissible unless they are the natural and proximate result of the injuries alleged. Behringer, a passenger on a bus operated by the South Plains Coaches Company, was accidentally thrown through the windshield head foremost, with resulting bodily injury. He sued to recover damages and obtained a verdict and judgment of $3,000. The defendant appealed to the supreme court of appeals of Texas (Amarillo), taking exception to the plaintiff's petition because it did not allege the nature and extent of the injuries complained of with sufficient definiteness. The plaintiff's petition alleged that his head was badly cut, bruised and scalped; that such injuries crazed and dazed him; that he was unconscious for some period thereafter, and that it was necessary to perform an operation on his head and to sew back his scalp. Such allegations, said the court, were not sufficient to justify the admission of the testimony to the effect that there was "a fracture of the skull and bone" over one eye, nor as a basis for a hypothetical question propounded to one witness, by which it was attempted to show that concussion of the brain would probably result from the injuries; because, said the court, fracture of the skull and concussion of the brain do not naturally, necessarily and proximately result from cuts and bruises of the head and from being scalped. These injuries imply surface injuries which would not necessarily result in a fracture of the skull. That part of the appellee's petition which alleged that

his body was bruised and injured, without stating the nature and location on the body of such injuries, was too general to admit of proof of injuries not elsewhere specifically described. The trial court erred in admitting such testimony. The allegation that the ligaments and nerves of the appellee's head, neck and shoulders were seriously and permanently injured was sufficient, and not open to objection, and under that allegation any serious and permanent injury to the ligaments and nerves of his head, neck and shoulders would be admissible. The judgment of the court below was reversed and the cause remanded.

Admissibility of Verdict of Coroner's Jury

(Dent v. National Life & Accident Ins. Co. of Tennessee (Texas), 6 S. W. (2d) 195)

This was an appeal from the Galveston County Court, in an action based on an accident insurance policy. The appellant insisted that the trial court erred in permitting the appellee to introduce in evidence over his objection a written ex parte statement prepared by the coroner, wherein it was substantially stated that the deceased had committed suicide. The court of civil appeals of Texas (Galveston) found nothing in the record, however, to show that any such written statement was in fact introduced in evidence. As the judgment rendered in favor of the insurer was to be reversed on other grounds, the court pointed out that such a statement of the coroner as was referred to in the record was clearly inadmissible to prove that the insured committed suicide or to prove any other fact not raised by the pleadings. Citing 37 C. J. section 436, page 633, the court pointed out that the weight of authority is against the admissibility, in an action on an insurance policy, of the verdict and the evidence taken at an inquest, to show the cause of the death of the insured—to show, for instance, that he came to his death by suicide—unless it is rendered admissible by the terms of the policy. This question was passed on by the supreme court of Texas in *Bochme* v. *Sovereign Camp*, W. O. W., 98 Texas 376, 84 S. W. 422, 4 Ann. Cas. 1019, in which it was said:

> Law writers, of late, have frequently animadverted upon the carelessness with which such inquests are frequently conducted, and to allow inquisitions to be used in a suit between private parties upon a cause of action growing out of the death of the deceased, as in this case, would be to introduce an element of uncertainty into the practice which, we think, would be contrary to public policy, and pernicious in the extreme; and for these reasons we conclude upon careful consideration, that the safer and better rule is to exclude such inquisitions.

Skill Required of Unlicensed Practitioners

(Monahan v. Devinny et al. (N. Y.), 229 N. Y. S. 60)

This was an appeal to the supreme court, appellate division, third department, New York, by the plaintiff, from an order dismissing her complaint against the defendants, a firm practicing chiropractic. The plaintiff complained that as a result of unskilful acts on the part of the defendants she was paralyzed. The trial court dismissed the complaint, because the action had not been brought within two years from the time the cause of action accrued, as required by the statute of limitations relating to malpractice actions against physicians (section 50, subd. 1, Civil Practice Act). On appeal, the plaintiff argued that the statute of limitations relating to actions based on malpractice by physicians was not applicable to the defendants, because they were not physicians and were not legally practicing medicine. The appellate court held that the acts of the defendants constituted the practice of medicine, although the defendants were not qualified or licensed. Although not qualified or licensed, the defendants must be held to the same standards of skill and care as prevail among those who are licensed. The fact that the action is based on unskilful treatment with injurious results indicates that it is an action for malpractice and consequently the limitation of the statute has run against it. The appellate court suggested, however, that it might still be possible for the plaintiff to obtain partial relief by basing her suit not on the tort or wrong done but on the contract between her and the defendants, against which cause of action the statute of limitations had not run. The recovery of damages could not be had for the wrong involving unskilful treatment, but the plaintiff might recover sums paid to the defendant on the contract and for sums paid out for nurses and medicines or other damages that flowed naturally from the breach of contract. The order of the court below dismissing the plaintiff's complaint was therefore modified so as to grant to her leave to amend the complaint within twenty days if she so desired.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 16-19. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.
American Association for Thoracic Surgery, St. Louis, April 25-27. Dr. Ethan Flagg Butler, Robert Packer Hospital, Sayre, Pa., Secretary.
American Climatological and Clinical Association, Old Point Comfort, Virginia, May 2-4. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.
American Gastro-Enterological Association, Atlantic City, May 6-7. Dr. W. J. Mallory, 1730 Connecticut Ave., N. W., Washington, D. C., Sec'y.
American Gynecological Society, Old Point Comfort, Va., May 20-22. Dr. Floyd E. Keene, 133 South 36th Street, Philadelphia, Secretary.
American Laryngological Association, Atlantic City, May 20-23. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
American Neurological Association, Atlantic City, May 27-29. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.
American Otological Society, Atlantic City, May 22-24. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
American Pediatric Society, St. Louis, May 20-22. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, Detroit, May 13-15. Dr. Walter A. Fansler, LaSalle Building, Minneapolis, Secretary.
American Psychiatric Association, Atlanta, Ga., May, 14-17. Dr. C. O. Cheney, Hudson River State Hospital, Poughkeepsie, N. Y., Secretary.
American Psychopathological Association, Atlanta, Ga., May 17. Dr. Martin W. Peck, 520 Commonwealth Avenue, Boston, Secretary.
American Society for Clinical Investigation, Atlantic City, May 6. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.
American Surgical Association, Cleveland, May 2-4. Dr. Lincoln Davis, 295 Beacon Street, Boston, Secretary.
Arkansas Medical Society, Hot Springs, May 7-9. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Association of American Physicians, Atlantic City, May 7-8. Dr. J. H. Means, Massachusetts General Hospital, Boston, Secretary.
California Medical Association, San Diego, May 6-9. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.
Connecticut State Medical Society, Waterbury, May 22-23. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
District of Columbia, Medical Society of, Washington, D. C., May 1. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Sec'y.
Georgia, Medical Association of, Macon, May 8-10. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.
Illinois State Medical Society, Peoria, May 21-23. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.
Iowa State Medical Society, Des Moines, May 8-10. Dr. Tom B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Salina, May 7-9. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-25. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.
Minnesota State Medical Association, St. Paul, May 13-15. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.
Mississippi State Medical Association, Gulfport, May 14-16. Dr. T. M. Dye, Box 295, Clarksdale, Miss., Secretary.
Missouri State Medical Association, Springfield, May 13-16. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.
National Tuberculosis Association, Atlantic City, May 27-30. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.
Nebraska State Medical Association, Omaha, May 14-16. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
New Hampshire Medical Society, Manchester, May 28-29. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New York, Medical Society of the State of, Utica, June 3-6. Dr. D. S. Dougherty, 2 Rockwell Street, New York, Secretary.
New York State Association of Public Health Laboratories, Utica, June 3. Mr. M. B. Kirkbride, New Scotland Avenue, Albany, Secretary.
North Carolina, Medical Society of the State of, Greensboro, April 22-24. Dr. L. B. McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Fargo, June 6-7. Dr. J. G. Lamont, San Haven, Secretary.
Ohio State Medical Association, Cleveland, May 7-9. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Oklahoma State Medical Association, Oklahoma City, May 27-29. Dr. C. A. Thompson, Barnes Building, Muskogee, Secretary.
Oregon State Medical Society, La Grande, May 16-18. Dr. F. D. Stricker, Medical Arts Building, Portland, Secretary.
Rhode Island Medical Society, Providence, June 6. Dr. J. W. Leech, 269 Broad Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Atlantic City, May 4. Dr. W. C. Spain, 20 East 36th Street, New York, Secretary.
Society of Neurological Surgeons, Montreal, Canada, June 3-5. Dr. Francis C. Grant, 133 South 36th Street, Philadelphia, Secretary.
South Carolina Medical Association, Charleston, May 7-9. Dr. E. A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Mitchell, May 7-9. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Brownsville, May 21-23. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Martinsburg, May 21-23. Mr. Joe W. Savage, 303 Professional Building, Charleston, Executive Sec'y.

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Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Roentgenol. & Rad. Therapy, New York

21: 1-100 (Jan.) 1929

Radium Therapy of Cancer at Radium Institute of Paris. C. Regaud, Paris, France.—p. 1.
*Treatment of Epithelioma of Penis by Radiotherapy and Electrocoagulation. G. E. Pfahler and B. P. Widmann, Philadelphia.—p. 25.
Radioactive Determination on Postmortem Specimens Taken from One Exposed to Radioactive Material Over Prolonged Period. H. H. Barker, New York.—p. 31.
Roentgen-Anatomic Studies of Colon in Patients with Pulmonary Tuberculosis. H. L. Sampson, Trudeau, N. Y., and B. Halpert, Chicago.—p. 37.
Ossifications of Costal Cartilages: Relation to Habitus and Disease. F. Riebel, Columbus, Ohio.—p. 44.
Criteria for Design of Standard Ionization Chamber. G. Failla, New York.—p. 47.
Comparison of Practical Methods of Measuring Roentgen-Ray Quality for Therapy. E. H. Quimby, New York.—p. 64.

Treatment of Epithelioma of Penis by Radiotherapy and Electrocoagulation.—This study is based on a review of ten cases of carcinoma of the penis, one in the terminal stage of ulcerating carcinoma in the groin following amputation and resection, and reviewed by Pfahler and Widmann. Of the ten patients, nine are free from any gross evidence of cancer twelve and seven years, eleven months, seven, three and a half, five, zero, three, three, and one and three-fourths years after beginning treatment. In the patients treated with radium alone, the primary disease was not cured. High voltage roentgen treatment was effectual in controlling the palpable lymph nodes, and in causing the disappearance of recurrent nodules in the perineum and groin (five years). It would seem that one cannot depend on irradiation alone to cure the primary cancer of the penis, except in the very early lesions. If enough radiation is used to cure the disease in an advanced case, there is likely to be a secondary necrosis due to an endarteritis caused by the irradiation. The apparent cure of 90 per cent of the patients by a combination of amputation by electrocoagulation and irradiation would seem to be sufficient reason for recommending this form of treatment. The permanent cure (five years) of an extensive, rapidly recurrent growth would indicate that irradiation should be used as postoperative treatment in all cases.

American Journal of Surgery, New York

6: 121-256 (Feb.) 1929

Study of Square Knot. E. M. Livingston, New York.—p. 121.
Prevention and Relief of Postoperative Complications: Wound Infection. J. K. Swindt, Pomona, Calif.—p. 137.
Postoperative Respiratory Complications. M. J. Keeney, Los Angeles.—p. 139.
Postoperative Circulatory Complications. R. W. Langley, Los Angeles.—p. 141.
Id.: S. Granger, Los Angeles.—p. 142.
Postoperative Gastro-Intestinal Ileus and Peritonitis. G. Dock, Los Angeles.—p. 143.
Id.: F. K. Collins, Los Angeles.—p. 144.
Postoperative Acidosis and Alkalosis. R. E. Fallas, Los Angeles.—p. 145.
Postoperative Urologic Complications. R. V. Day, Los Angeles.—p. 147.
Compression Myelitis Caused by Tumors: Six Cases. W. A. Smith and C. E. Dowman, Atlanta, Ga.—p. 151.
Analysis of Vertebral Anomalies. T. A. Willis, Cleveland.—p. 163.
Diagnosis and Treatment of Acute Abdominal Pathology. U. Maes, New Orleans.—p. 169.
Acute Hematogenous Infection of Kidney. W. Linder, New York.—p. 175.
Use of Tennis Forceps in Cholecystectomy. H. Kümmell, Hamburg-Eppendorf, Germany.—p. 180.
Enterostomy with Fenestrated T Tube. F. S. Hough, Sibley, Iowa.—p. 182.
Congenital Dislocation of Hip Joint. A. Krida, New York.—p. 185.
Dyschondroplasia: Multiple Cartilaginous Exostosis: Two Cases. S. W. Boorstein and H. Hirsch, New York.—p. 194.
Spinal Anesthesia. T. H. Russell, New York.—p. 201.
Goiter in Children: Treatment. H. D. Kitchen, Winnipeg, Manitoba.—p. 209.
Immediate Preoperative Treatment of Exophthalmic Goiter. J. T. Mason, Seattle.—p. 213.
"Atypical" in Thyroid Work. J. K. McGregor, Hamilton, Ontario.—p. 217.
Thyroid in Infections and Toxemias: Pathologic Changes in Human Gland. W. H. Cole, N. A. Womack and S. H. Gray, St. Louis.—p. 221.
Present Status of Electrosurgery. G. E. Ward, Baltimore.—p. 230.
Cervical Salivary Gland. J. Browder, New York.—p. 234.
Recurrent Dislocation of Thumb: Capsulorrhaphy. H. Milch, New York.—p. 237.
Dislocation of Metatarsal Bones: Case. J. K. Narat, Chicago.—p. 239.
Solitary Cyst of Kidney. J. K. Ormond, Detroit.—p. 241.

American Review of Tuberculosis, Baltimore

19: 119-232 (Feb.) 1929

*Study of Tuberculous Lesions in Lung of Negro Child Nine Weeks Old. W. S. Miller, Madison, Wis.—p. 119.
Tuberculosis of Common Crow. C. A. Mitchell and R. C. Duthie, Ottawa, Canada.—p. 134.
Pregnancy and Pulmonary Tuberculosis. A. H. Morse, New Haven, Conn.—p. 140.
*Acute Subapical Versus Insidious Apical Tuberculosis. B. H. Douglas, M. Pinner and B. Wolepor, Northville, Mich.—p. 153.
*Recurring Nontuberculous Pneumonia Resulting from Cystic Overflow. E. Morris and C. P. Harrod, San Fernando, Calif.—p. 174.
Multiple Pulmonary Abscesses Resulting from Blood Infection by Micro-Organisms of Proteus Group. M. J. King and R. H. Morgan, Mount McGregor, N. Y.—p. 182.
Bronchiectasis. H. Brunn and W. B. Faulkner, Jr., San Francisco.—p. 191.
*Tuberculous Ulceration of Bronchus: Lung Abscess Following Tonsillectomy. M. C. Myerson, New York.—p. 201.
Diaphragmatic Studies in Tuberculosis. P. D. Crimm, Hartford, Conn.—p. 206.
*Complement Fixation Test in Different Clinical Manifestations of Tuberculosis. T. Thjötta and E. Gundersen, Oslo, Norway.—p. 212.
Occurrence of Nonspecific Agglutinins in Tuberculosis. R. A. Kilduffe and W. W. Hersohn, Atlantic City, N. J.—p. 223.
*Occurrence of Positive Wassermann and Precipitation Reactions in Pulmonary Tuberculosis. R. A. Kilduffe and W. W. Hersohn, Atlantic City, N. J.—p. 228.

Tuberculous Lesions in Lung of Negro Child Nine Weeks Old.—A small tuberculous lymph node situated in the pleura, forming part of the boundary of an incisura interlobaris, with its afferent and efferent lymphatics, is described by Miller. The focus from which tubercle bacilli were conveyed to the lymph node, and the course of the lymphatics through which they passed, were identified. Only in that portion of the lymph node supplied by the lymphatic conveying the bacilli were tubercles developed. The other lymphatics which entered the node formed a wide open bypath through the node. The toxins contained in this bypath and in the associated sinuses gave rise to an intense hyperplasia of the lymphoid tissue in the remainder of the node. The lymph flow, as shown by the presence of numerous valves, was toward the pleura. This showed that the direction of lymph flow described for other portions of the lung holds true in this situation; namely, that from a narrow zone around the periphery of the lung the flow is toward the pleura, while in other portions of the lung it is toward the hilum. Beyond the lymph node the flow was through the pleural network of lymphatics to a hilum node which showed active lesions. Lymphatics from other parts of the lung were seen entering the hilum node, showing that those described were not the only source from which it was infected.

Acute Subapical Versus Insidious Apical Tuberculosis.—Douglas et al. conclude that progressive and destructive pulmonary tuberculosis usually begins suddenly, with exudative subapical lesions. Strictly apical productive tuberculosis is not, as a rule, the incipient stage of progressive and destructive pulmonary tuberculosis; it may precede the latter, but even in such cases the latter starts usually in the manner already described. The rôle which apical tuberculosis plays in phthisiogenesis is rather insignificant as compared to that of acute subapical infiltrations. Lesions far advanced as to extent and excavations frequently develop within less than six months. Processes leading to active progression and to excavation are most frequently associated with acute symptoms. Apical involvement is, in the majority of patients, not an occurrence of incipiency but a late development. Diagnostic and therapeutic endeavors must be

directed primarily toward the acute, subapical processes, and not toward the insidious apical disease. Physical signs and symptomatology, traditionally described as characteristic for "incipient pulmonary tuberculosis," are misleading for the detection of truly incipient subapical acute processes.

Recurring Nontuberculous Pneumonia Resulting from Cystic Overflow.—The title of this report by Morris and Harrod is based on the following facts: The disability was postinfluenzal. Roentgenologic observations have shown at different dates a movable lobulated mass near the upper pole of the right hilum, which probably has caused a characteristic pressure symptom, such as an inconstant "brassy" cough, pain, recurring pneumonic infiltrations with pleural effusions, dyspnea, and a marked displacement of the mediastinum to the right. The series of hemorrhages occurring independently of the so-called pneumonias as to time appear to lend weight to the diagnosis of a bronchial sac or cyst, as there was no rise in temperature or acceleration of the pulse rate or aspiration pneumonia following. Because the acute exacerbations in the lung and pleura occurred in more or less regular cycles, without apparent cause, the authors were led to the conclusion that, when the cystic mass filled, it overflowed, and the result of this incubated overflow manifested itself as an inflammatory condition of the lung which pursued the clinical course of a lobar pneumonia.

Tuberculous Ulceration of Bronchus.—In the case reported by Myerson, extensive involvement of the lower trachea and the right main bronchus, from the upper lobe branch down to the visible branches of the lower lobe, was encountered in the course of bronchoscopy for drainage and irrigation of a suppurating focus in the upper lobe. He feels that it would be well to consider the possibility of a tuberculous basis or of a superimposed tuberculosis in any case of lung suppuration.

Complement Fixation Test in Manifestations of Tuberculosis.—Three hundred and twenty-five serums from patients with different manifestations of tuberculosis have been examined by Thjötta and Gundersen for their complement fixing ability. These tests fall under three main headings, namely, pulmonary, surgical and skin tuberculosis. The percentages of positive tests in the three groups were 94.6, 44.0, and 12.3, respectively. Only patients with pulmonary tuberculosis show a relatively high percentage of positive tests. In the other manifestations the positive tests seem to depend mostly on the presence or pre-existence of tuberculosis of the lungs. The complement fixation test in tuberculosis cannot be compared with the Wassermann test in syphilis, but rather with the same test in other bacterial infections when the specific microbe is used as an antigen. The antigens used in these studies, namely, dried acetone-extracted bacterial cells suspended in physiologic solution of sodium chloride, have given the same proportion of positive tests as those obtained with the more elaborate antigens of Wadsworth, which consist of acetone-insoluble lipoids of the tubercle bacillus.

Occurrence of Positive Wassermann and Precipitation Reactions in Pulmonary Tuberculosis.—Two hundred serums from patients in all stages of pulmonary tuberculosis were examined by Kilduffe and Hersohn with the Kolmer complement fixation test and the Kline and Young precipitation test. Negative reactions to both tests were obtained with 191 serums and positive reactions were obtained with eight serums. Two serums were negative to the complement fixation test but reacted to the precipitation test. The plus-minus precipitation reaction is regarded by all competent observers as being without diagnostic significance, and in this case there was neither clinical nor historical evidence of syphilis. The other serum, in which a plus-two precipitation reaction was obtained, illustrates anew the fact common to the knowledge of all serologists: that, on a single test, a syphilitic serum may be positive to one reaction and negative to the other, and vice versa on subsequent occasions; or, in other words, either procedure may give a false negative reaction in a small percentage of cases. In all the remaining cases reacting positively, corroboratory evidence as to the specificity of the reaction was obtainable and false or nonsyphilitic reactions did not occur.

Annals of Internal Medicine, Ann Arbor

2: 725-874 (Feb.) 1929

*Pathology of Certain Signs and Symptoms in Primary Carcinoma of Lung. C. V. Weller, Ann Arbor, Mich.—p. 725.

Blood as Diagnostic Aid in Differential Diagnosis of Lymphadenopathies. J. D. Lyttle and L. Rosenberg, New York.—p. 747.

Roentgenography in Relationship to Clinical Findings in Pulmonary Tuberculosis. A. G. Schnack, Honolulu, Hawaii.—p. 763.

Medical Management of Gastric Ulcer. G. G. Richards, Salt Lake City.—p. 771.

Experimental Study of Acquired Resistance of Rabbit's Renal Epithelium to Mercuric Chloride. W. C. Hunter, Portland, Ore.—p. 796.

Etiology of Backache in Medical Practice. G. L. Lambright, Cleveland. —p. 807.

*Coincidence of Endocrine Dystrophies and Mental Subnormalities. W. G. Downs, Jr., Philadelphia.—p. 810.

Glioma of Centrum Semiovale of Right Parietal Lobe: Case. H. C. Gordinier, Troy, N. Y.—p. 815.

Joseph Rodman Drake, M.D., Physician and Poet. L. H. Roddis, Washington, D. C.—p. 822.

Signs and Symptoms in Primary Carcinoma of Lung.—The outstanding signs and symptoms in twelve cases of primary carcinoma of the lungs and bronchi reported by Weller were: cough, 5; dyspnea, 4; loss of weight, 4; pain in chest, 3; hemoptysis, 3; pupillary changes, 3; edema and congestion of upper half of body, 3; clubbing of fingers, 3; pain in back, 3; pain in legs, 3; extension through thoracic wall, 3; recurrent laryngeal paralysis, 2, pleural effusion, 2; weakness, 2; abdominal pain, 2; metastases in cervical nodes, 2; dysphagia, 2; fever, 2; cyanosis, 1; pain in arms, 1; sputum without blood, 1; vomiting, 1; pulses not synchronous at wrists, 1; drooping of eyelids, 1; coma, 1; paralysis of lower extremities, 1.

Coincidence of Endocrine Dystrophies and Mental Subnormalities.—Downs asserts that a majority of the endocrine dystrophies present marked and definite psychic symptoms peculiar to their class. It seems probable that both somatic and psychic symptom complexes are the result of endocrine disturbances acting on the entire organism, including also the other glands of internal secretion. It is probable that still deeper than these hormone effects are other more obscure causative factors which, through the glands of internal secretion, affect the entire organism. It is obvious that the way in which many experimentally produced endocrine variations affect the organism closely parallels the effect of many definitely hereditary aberrations. It seems, then, plausible to believe that heredity may in great part function through the medium of the endocrine system, to produce definite symptom complexes involving both physical and psychic changes of definite and characteristic types.

Archives of Internal Medicine, Chicago

43: 147-298 (Feb.) 1929

*Can Gallbladder Empty Through Duodenal Biliary Drainage? Is Gallbladder Source of B Bile? Cholecystographic Study of Biliary Drainage. B. B. V. Lyon, Philadelphia.—p. 147.

*Gallop Rhythm in Hypertension. H. Mond and E. T. Oppenheimer, New York.—p. 166.

Experimental Heart Block. C. J. Lundy and L. W. Woodruff, Chicago. —p. 184.

Excursion of Costal Margins in Health and Disease. H. A. Bray and J. L. Wilson, Ray Brook, N. Y.—p. 187.

*Ochronosis: Case of Carbolochronosis. S. E. Goldberg, Detroit.—p. 196.

Opium Addiction: 1. Conduct of Addict in Relation to Investigative Study. A. B. Light and E. G. Torrance, Philadelphia.—p. 206.

*Radicular Syndrome in Hypertrophic Osteoarthritis of Spine: Analysis of Thirty Cases. L. Gunther and W. J. Kerr, San Francisco.—p. 212.

*Cardiovascular Problem in Pneumonia. B. M. Randolph, Washington, D. C.—p. 249.

*Impaired Auriculoventricular Conduction in Rheumatic Fever: Comparative Study with Diagnostic Applications. R. L. Levy and K. B. Turner, New York.—p. 267.

Cultural and Serologic Reactions with Green-Producing Micrococci from Measles. N. S. Ferry and A. Noble, Detroit.—p. 274.

Cholecystographic Study of Biliary Drainage.—It is evident from Lyon's study, first, that the gallbladder empties its liquid contents largely by means of its intrinsic musculature and that such factors as diaphragmatic pressure, respiratory movements, changes in intra-abdominal pressure, changes in tonicity of the duodenal wall of Oddi's sphincter, which thus contribute to a milking-like action on the common duct, all play a relatively unimportant rôle. Second, good specimens of gallbladder bile may be obtained by duodenal tube after intraduodenal stimulation with magnesium sulphate, peptone and olive oil and to a lesser degree with some other substances. Third, specimens of gallbladder bile are therefore procurable

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for direct microscopic, chemical and bacteriologic study in the majority of patients with various grades of pathologic changes in the gallbladder, except when the cystic duct is obstructed by impaction of a stone, stricture or adhesions. Catarrhal obstruction of the cystic duct furnishes one important differential exception. This study clearly indicates that in patients with unobstructed cystic ducts and less advanced cholecystitis, the gallbladder is the source of B bile and empties it after intraduodenal stimulation.

Gallop Rhythm in Hypertension.—Mond and Oppenheimer state that gallop rhythm as seen in persons with hypertensive disease is produced by an extra sound occurring simultaneously with auricular contraction. Increased diastolic tension of the ventricle and increased intra-auricular pressure are regarded as the main factors in the causation of the accessory sound. The relation of these conditions to the theory of cardiac insufficiency is discussed. Protodiastolic and presystolic gallop rhythm, in the hypertensive type of case, are due to essentially the same mechanism. The physiologic third sound and the reduplication of the second sound are distinguished from true gallop sound because they are produced by fundamentally different mechanisms.

Endogenous Ochronosis.—A case of endogenous ochronosis due to long continued application of wet phenol dressings to chronic ulcers of the leg is reported by Goldberg. Special reference is made to the pathologic changes in the bones and cartilages. The various clinical and laboratory features of the different types of ochronosis are enumerated and discussed.

Radicular Syndrome in Hypertrophic Osteartheritis of Spine.—Hypertrophic osteartheritis of the spine, root pain and radicular sensory alterations, according to Gunther and Kerr, are definitely to be associated as a clinical syndrome. The symptoms of the syndrome are dependent on movement of the spine, relaxation of the supporting spinal musculature or coughing, sneezing and straining. The syndrome is characteristic enough to permit clinical recognition. The symptoms of the syndrome are independent of the visceral diseases which they simulate, and can be differentiated from the visceral diseases with which they may coexist.

Cardiovascular Problem in Pneumonia.—On the assumption that failure of the heart muscle is a fundamental cause of mortality from pneumonia, there has grown up a therapy that is widely practiced in the United States, namely, the routine administration of digitalis. From his experience and from the work of his colleagues, Randolph has formed an opinion that is at variance with the one commonly accepted. This opinion is that the routine treatment with digitalis for pneumonia is ineffective; that not infrequently it is injurious, and that it is based on a failure to apprehend important factors in the pathologic physiology of the disease. He analyzes 100 cases, working on the hypothesis that the circulatory failure occurring in pneumonia is primarily peripheral, and that the myocardial failure is secondary. Randolph has made some observations on the behavior of patients in whom the therapy was directed toward sustaining the vasomotor tone. Solution of pituitary was the agent selected. Epinephrine was rejected, partly because its action is too transient, and partly because it increases the contraction of the heart muscle. He believes that something beneficial has been accomplished in some patients. It manifestly does not have a beneficial effect on the toxemia. So far no ill effects have been seen that could be attributed to the drug.

Impaired Auriculoventricular Conduction in Rheumatic Fever.—In following a series of cases of rheumatic fever in which frequent electrocardiograms were made, the diagnostic importance of disturbances in auriculoventricular conduction became apparent to Levy and Turner. The present study covers a period of nine years. Most of the patients had arthritis; some were predominantly of the cardiac type. The records of all rheumatic patients showing prolonged auriculoventricular conduction or heart block (partial or complete) were critically analyzed. Delayed conduction, as evidenced by prolonged P-R time, is much more common than heart block. These disturbances are usually transitory. In arteriosclerotic and hypertensive heart disease, impaired conduction is encountered next in order of frequency. In this group of cases, heart block is relatively more common. The disturbances in conduction tend to become permanent. In rheumatic fever, as seen in a general medical service, about 27 per cent of the cases show prolonged auriculoventricular conduction. This condition is usually, though not invariably, accompanied by leukocytosis during the active stages of the disease. A prolonged P-R interval or heart block occurring in a person under the age of 35, who is not syphilitic and who has not taken digitalis, affords presumptive evidence of the presence of rheumatic carditis. This sign is often useful in establishing the rheumatic nature of a cardiac disturbance, in the absence of other criteria. Prolongation of auriculoventricular conduction may persist and give evidence of myocardial lesions in rheumatic fever long after the other clinical manifestations of the disease have subsided.

Archives of Otolaryngology, Chicago

9: 123-236 (Feb.) 1929

Physiology of Vestibular Nystagmus. A. C. Ivy, Chicago.—p. 123.
Modified Radical Operation on Mastoid. C. H. Smith, New York.—p. 135.
Multiple Primary Carcinomas of Larynx and Esophagus: Case. D. L. Wilbur, Philadelphia.—p. 154.
Incidence of Nasal Sinusitis with Diseases of Ear: 100 Cases in Children. E. P. Fowler, New York.—p. 159.
Gradenigo's Syndrome. S. D. Greenfield, New York.—p. 171.
Bony Labyrinth of New-Born Infant and of Adult. G. E. Tremble, Montreal.—p. 175.
Comparison of Outlines of Frontal Sinus in Vivo: Shown by Transillumination and Roentgen Rays. G. Fetterolf, Philadelphia, and E. E. Sprenkel, Jenkintown, Pa.—p. 181.
*Treatment of Acute Infections of Middle Ear and Prevention of Mastoiditis. A. I. Schwartz, New York.—p. 185.
Anatomy and Physiology of Ear. P. E. Meltzer, Boston.—p. 188.

Treatment of Acute Infections of Middle Ear and Prevention of Mastoiditis.—The method used by Schwartz is vacuum suction applied by a special tube devised for the purpose of relieving pus under pressure, thus insuring better drainage. In a series of 1,200 cases in which the method was used, the results were very gratifying. Only nineteen patients of this series were operated on for involvement of the mastoid; six came to Schwartz after from four to six weeks of illness (the use of the method here was out of question), and they showed all the typical signs of mastoiditis; five of the remaining thirteen were patients in whom there had been tenderness of the tip of the ear, and eight did not follow out the treatment. Schwartz asserts that a patient with an acute infection of the middle ear (whether produced by staphylococcus, pneumococcus or streptococcus) who is given the benefit of this treatment early enough—before pus has reached the mastoid cells and the roentgen ray reveals any destruction of tissue—will more readily recover without involvement of the mastoid than under any other form of treatment. In patients in whom the mastoid is involved or in whom tenderness of the tip is shown, this method is not of any value as a preventive.

Archives of Pathology, Chicago

7: 197-379 (Feb.) 1929

*Physiology of Vitamins: V. Cutaneous Manifestations Related to Deficiency of Vitamin B Complex. G. R. Cowgill, C. J. Stucky and W. B. Rose, New Haven, Conn.—p. 197.
*Effect of Certain Toxic Substances in Bacterial Cultures on Intestinal Movement: II. Effect of Filtrates of Young Cultures of Colon Typhoid Group of Organisms on Intestinal Movement of Rabbits as Recorded by New Cinematographic Method; Correlation of This Effect with Production of Food Poisoning by Members of This Group. E. E. Ecker and M. S. Biskind, Cleveland.—p. 204.
Circulation of Blood Through Spleen Pulp. W. J. MacNeal, New York.—p. 215.
*Chromaffin Cell Tumor of Suprarenal Medulla (Pheochromocytoma). C. B. Rabin, New York.—p. 228.
*Effect of Electric Currents on Arteries: Histologic Study. R. H. Jaffé, D. Willis and A. Bachem, Chicago.—p. 244.
Aortic Lesions in Dogs Caused by Infection with Spirocerca Sanguinolenta. K. Hiyeda, Mukden, China, and E. C. Faust, New Orleans.—p. 253.
Window Demonstration in Teaching Bacteriology. D. L. Belding, Boston.—p. 273.
Trauma and Tumors. L. C. Knox, New York.—p. 274.

Cutaneous Manifestation Related to Deficiency of Vitamin B Complex.—Lesions of the skin, frequently symmetrical, were observed by Cowgill et al. in six dogs subsisting for long periods on artificial diets adequate except for the vitamin B complex. In two animals, the administration of a preparation rich in vitamin B was followed by a definite healing of these sores without any other treatment. One dog, after

approximately a month's subsistence on the deficient diet, developed what appeared to be preulcerative stages of such lesions. The administration of the vitamin corrected the partial anorexia and checked the further development of the potential sores. The remaining three animals died suddenly from deficiency of vitamin B before treatment with the vitamin was effective. The relation of the individual components of the vitamin B complex to such lesions of the skin remains to be determined.

Effect of Toxic Substances in Bacterial Cultures on Intestinal Movement.—A new method was devised by Ecker and Biskind for the observation and recording by motion pictures of intestinal motility in rabbits. The method was applied to the study of the colon-typhoid group of organisms, with particular reference to the effect of filtrates of young cultures on the intestines. The young culture filtrates of certain subgroups of the colon-typhoid group were found to produce violent intestinal reactions (peristaltic rushes and circular muscle spasms). The culture filtrates of those organisms commonly known as producers of food poisoning and which cause violent acute intestinal reaction in man (*S. enteritidis, S. aertrycke* and *S. suipestifer*) were found to be the ones which induced peristaltic rushes in rabbits; while culture filtrates of other organisms of the group, which may at times have been implicated in outbreaks of food poisoning (for example, *S. paratyphi* A), were variable in their effect. Some filtrates of organisms not definitely known to be associated with outbreaks of food poisoning (*Eberthella typhi, Escherichia communior* and *S. schottmülleri*) failed to produce a visible effect. It was further observed that the most effective filtrates were obtained from cultures of those types that cause disease in both man and animal (*S. enteritidis, S. aertrycke* and *S. suipestifer*).

Chromaffin Cell Tumor of Suprarenal Medulla (Pheochromocytoma).—Rabin reports the case of a woman, aged 45, who for many years had been suffering from hypertension together with nervous manifestations similar to those of exophthalmic goiter. She had fever for about one week, developed signs of meningitis and died in coma. At autopsy a marked hypertrophy of the heart was found associated with generalized arteriosclerosis and arteriolosclerosis, chronic passive congestion of the viscera, infarcts of the lungs and a pheochromocytoma of the medulla of the right suprarenal gland.

Effect of Electric Currents on Arteries.—Jaffé et al. conclude that the severe arterial changes that are frequently found in the vicinity of electrical burns are due to the heat and are nonspecific for the action of the electric current.

California & Western Medicine, San Francisco

30: 73-144 (Feb.) 1929

Menace to Medicine. R. Brown, Santa Barbara.—p. 73.
Constitutional Psychopathic Inferior Personality: With or Without Psychosis. T. J. Orbison, Los Angeles.—p. 78.
Radio Knife in Dermatologic Surgery. H. J. Templeton, Oakland.—p. 83.
*Protozoal Infestations: Stovarsol Treatment. H. E. Butka, Los Angeles. —p. 87.
*Radiation Treatment of Certain Kidney Disorders. A. Soiland, W. E. Costolow and O. N. Meland, Los Angeles.—p. 93.
Syphilologist's Ideal Clinic. E. K. Stratton, San Francisco.—p. 96.
Prolonged Monocular Occlusion in Diagnosis of Heterophoria. E. M. Talbott, San Francisco.—p. 100.
Subacute Bacterial Endocarditis: Part II. E. C. Dickson, San Francisco.—p. 103.
Anesthesia in Obstetrics. W. J. Blevins, Woodland.—p. 106.
Outline of Prenatal Care. C. H. Lewis, Santa Monica.—p. 108.
Bone Sarcoma Committee of American College of Surgeons. E. I. Bartlett, San Francisco.—p. 111.
Myasthenia Gravis in Boy Aged Ten Years. M. Gerstle, Jr., San Francisco.—p. 113.
Anesthesia for Head Operations. L. A. Rethwilm, San Francisco.—p. 115.
Lure of Medical History: Invocatio Medici. S. P. Lucia, San Francisco.—p. 117.
Perforation of Pleura by Inspired Foreign Body: Case. H. B. Graham, San Francisco.—p. 120.
Bladder Pressure and Volume Determinations as Aids in Diagnosis: New Recording Instrument. F. H. Redewill, San Francisco.—p. 121.
Foreign Body (Displaced Molar) in Cheek: Case. F. S. Balycat, Los Angeles.—p. 123.

Protozoal Infestations.—Butka is convinced that a high percentage of individuals are harboring one or more varieties of the intestinal protozoan parasites. Approximately 10 per cent of his series of patients harbored *Endameba histolytica*. Acetarsone is apparently a specific for the intestinal ameba. It is a powerful drug, and untoward symptoms are frequent if the dosage is continued for a period of more than seven days. A toxic erythema, resembling measles, occurs in at least 6 per cent of all cases treated by acetarsone. Satisfactory results were obtained in the series of cases treated by acetarsone alone in approximately 70 per cent. A mixed treatment combining the effects of acetarsone with emetine, an organic iodine preparation, bismuth-emetine-iodide, and other well known remedies for the protozoan parasites will probably give a higher percentage of satisfactory results.

Radiation Treatment of Certain Kidney Disorders.—Soiland et al. assert that they have irradiated with benefit a considerable number of kidney lesions. In several cases of postoperative tuberculous sinus, healing resulted from irradiation after other local therapeutic measures had failed. A number of patients with tuberculous infections of the kidneys have been rendered clinically well, and kidney complications in cases in which mixed infection prevailed, with or without hemorrhage, have shown definite response to roentgen irradiation. High voltage roentgen therapy should be a benefit in deep-seated tuberculous lesions, since for superficial tuberculous conditions of the skin, and for certain glandular tuberculous lesions, radiation has superseded any other type of therapy. A number of cases of inoperable carcinoma of the kidney have been treated with high voltage roentgen therapy. A few patients under observation after two or three years have shown great improvement. Carcinoma of the kidney reacts more unfavorably to irradiation than does carcinoma in any other part of the body. The chief value of radiation in this condition is in checking the hemorrhage. In some of the very advanced cases the hemorrhage would cease for several months after treatment, recur, and again be checked after subsequent treatment. Radiation has been of value as a preoperative measure, checking the hemorrhage and improving the patient's general condition for subsequent operation. In all cases treated, hemorrhage was checked.

Colorado Medicine, Denver

26: 31-66 (Feb.) 1929

Esophageal Diverticula: Two Cases. G. E. Rice, Pueblo.—p. 34.
Isolated Fractures of Transverse Processes of Lumbar Vertebrae. J. B. Hartwell, Colorado Springs.—p. 37.
Limitations of Cholecystography. H. J. Sims, F. E. Deimer and P. C. Carson, Denver.—p. 43.
Hemolytic Jaundice Apparently Caused by Bacillus Welchi: Case. B. E. McGovern, Colorado Springs.—p. 46.
Medical Aspects of Crime Situation. F. G. Ebaugh, Denver.—p. 47.
Hypothyroidism. J. C. Kamp, Casper, Wyo.—p. 62.

Delaware State M. Journal, Wilmington

1: 19-34 (Feb.) 1929

Bronchoscopy in Diagnosis and Treatment of Asthma. G. Tucker, Philadelphia.—p. 19.
Postencephalitis. M. A. Tarumianz, Farnhurst.—p. 22.

Florida M. Assoc. Journal, Jacksonville

15: 385-422 (Feb.) 1929

Pyelitis of Pregnancy. R. J. Holmes and M. M. Coplan, Miami.—p. 385.
Phases of Ophthalmology That Concern General Practitioner. S. Richardson, Jacksonville.—p. 388.
Diagnosis of Diseases of Urinary Tract. J. U. Reaves, Mobile, Ala.—p. 392.
Case of Colloid Cancer of Transverse Colon. A. D. Little, Thomasville, Ga.—p. 396.
Tuberculosis of Kidney. F. E. Davis, Chattahoochee.—p. 398.
Oral Focal Infection. C. J. Caraballo, Tampa.—p. 401.

Indiana State M. Assoc. Journal, Fort Wayne

22: 47-88 (Feb. 15) 1929

Analgesic and Anesthetic Properties of Sodium Iso-Amylethyl Barbiturate. L. G. Zerfas and J. T. C. McCallum, Indianapolis.—p. 47.
Physician and Workmen's Compensation Act. F. S. Crockett and W. M. Crockett, Lafayette.—p. 50.
Fracture of Navicular (Carpal) Bone. E. B. Mumford, Indianapolis. —p. 56.
Eye in Relation to Medical Diagnosis. J. A. MacDonald, Indianapolis. —p. 58.
*New Bone Peg and Method of Use. H. R. Allen, Indianapolis.—p. 61.

New Bone Peg and Method of Use.—Allen's peg differs from other pegs in that half of the length of the bone peg is left smooth and polished, but the other half is threaded like a screw or may have sharp, closely approximated, shallow grooves turned out of its surface. An incision is made over one of the

broken ends of bone, just large enough or rather just small enough to permit the broken end to protrude. This broken end has a V shaped notch cut out of its margin; then the canal is bored or reamed out as far as the peg is long. The peg is now inserted so far that only two or three of the turned grooves can be seen in the notch of the V shaped, marginal opening. This portion of the broken bone containing the peg is replaced in the wound; the other end is brought out through the small incision and its canal is bored out to a depth of only half the length of the peg, and then it is put back into the wound. The fracture is now accurately reduced. When the broken ends are accurately placed, a sharp pointed instrument engages with the grooves and works the peg into the empty bone canal. When the point finds no more grooves to engage, it is certain that half of the peg is on duty in each of the broken fragments, and closure of the wound ends the operation.

Journal of Clinical Investigation, Baltimore

6: 517-631 (Feb. 20) 1929

Total Acid-Base Equilibrium of Plasma in Health and Disease: X. Acidosis of Nephritis. J. P. Peters, A. M. Wakeman, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 517.
Id.: XI. Hypochloremia and Total Salt Deficiency in Nephritis. J. P. Peters, A. M. Wakeman and C. Lee, New Haven, Conn.—p. 551.
Id.: XII. Renal Edema. J. P. Peters, A. M. Wakeman, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 577.
*Influence of Iodine on Excretion of Creatine in Exophthalmic Goiter. W. W. Palmer, D. A. Carson and L. W. Sloan, New York.—p. 597.
*Vitamin B Content of Cancer. H. Jackson, Jr., and C. I. Krantz, Boston.—p. 609.
*Digitalis in Ambulatory Cardiac Patients: II. Elimination of Digitalis in Man. H. Gold and A. C. DeGraff, New York.—p. 613.

Influence of Iodine on Excretion of Creatine in Exophthalmic Goiter.—Creatinuria was studied by Palmer et al. in thirty-two cases of exophthalmic goiter and eleven cases of so-called toxic adenoma. In all patients excreting appreciable amounts of creatine in the urine there is a marked diminution of the creatinuria following the administration of iodine. The influence of iodine on the creatinuria is usually accompanied by a fall in basal metabolism, but not always. The relation between hyperthyroidism and endogenous nitrogen metabolism, with especial reference to creatinuria, is discussed. In view of the possible significance of the labile phosphorus-creatine compound in normal muscle function and the outstanding symptom of muscular weakness, the relation of the creatinuria in hyperthyroidism to these phenomena is suggested.

Vitamin B Content of Cancer.—Jackson, Jr., and Krantz failed to find any evidence that malignant tissue contains unusually large amounts of vitamin B. In fact, it is inferior in this respect to normal liver. These observations do not favor the hypothesis that malignant disease is due to or associated with excess vitamin B.

Elimination of Digitalis in Man.—Evidence is presented by Gold and DeGraff that a patient does not eliminate a fixed quantity of digitalis, but merely a percentage of that which is present in the body at any time.

Journal of Preventive Medicine, Baltimore

3: 1-79 (Jan.) 1929

Relationship of Hemolytic Streptococci to Spread of Scarlet Fever. G. Moriwaki, Dairen, China.—p. 1.
Correlation Between Skin Test and Active Immunization in Scarlet Fever. G. Moriwaki, Dairen, China.—p. 13.
To What Extent Do Toxin-Antitoxin Mixtures Sensitize to Therapeutic Serum? J. E. Gordon and S. M. Creswell, Detroit.—p. 21.
Absenteeism Among Students of Chicago Normal College. D. V. P. Phipps, Chicago.—p. 31.
Seasonal and Age Distribution of Deaths from Typhoid in New York, Chicago and Providence, R. I. J. H. Mills, Chicago.—p. 37.
Hypersensitiveness to Helminth Proteins: II. Cutaneous and Precipitin Tests with Ascaris Extracts in Infected and Immunized Animals. F. A. Coventry, Chicago.—p. 43.
*Epidemiologic and Bacteriologic Study of Epidemic Meningitis in Chicago. A. S. Pope and J. L. White, Chicago.—p. 63.

Epidemiologic and Bacteriologic Study of Epidemic Meningitis in Chicago.—The immediate motive for this study by Pope and White was the high case fatality observed among serum-treated patients. Of 200 patients, 194 received anti-meningococcic serum. Of these, 103 recovered and ninety-one died, giving a case fatality of 46.4 per cent. Of the six that did not receive serum all died. All but three of the 194 serum-treated patients received intraspinal injections, and in addition fifty-eight received serum intravenously and six intramuscularly. In three of the cases terminating fatally, only intravenous therapy was used. The case fatality is lowest in the patients who received serum within twenty-four hours of the onset, but even after an interval of three days the fatality is hardly significantly higher. Twenty-one of the ninety-seven deaths occurred within twenty-four hours after admission to the hospital, too soon for the patient to be benefited by serum treatment. If these deaths were deducted from the Chicago data, the fatality rates for the first three or four days from onset would be materially lowered. The amount of serum given at each injection varied from 20 to 60 cc., and 30 cc. was the amount most commonly used. The majority of patients received injections every twenty-four hours during the acute stage, and the total number of injections was proportional to the duration of illness.

Kansas M. Society Journal, Topeka

30: 35-70 (Feb.) 1929

Treatment of Empyema. L. E. McFarlane, Manhattan.—p. 35.
Early Diagnosis of Tuberculosis. F. A. Trump, Ottawa.—p. 37.
Visit to Harvey's Alma Mater—Padua. R. H. Major, Kansas City, Mo.—p. 41.
Blood Pressure in Disturbances of Thyroid. J. L. DeCourcy, Cincinnati.—p. 44.
Umbilical Cord Tie. H. W. Davis, Plains.—p. 46.
Treatment of Hemorrhoids. B. A. Nelson, Manhattan.—p. 47.
Expert Evidence. J. A. Dillon, Larned.—p. 50.
Technic for Routine Gastric Analysis and Duodenal Drainage. R. Hammat, Kansas City.—p. 52.
Ulceration of Meatus and Ammonia in Diaper. H. L. Dwyer, Kansas City, Mo.—p. 55.
Simultaneous Occurrence of Infantile Paralysis in Mother and Infant. J. B. Weaver, New York.—p. 56.

Medical Journal and Record, New York

129: 181-240 (Feb. 20) 1929

Work of Medical Society of County of New York. D. Stetten, New York.—p. 181.
Etiology of High Blood Pressure. J. F. H. Broadbent, London, England.—p. 185.
Gout and Gouty Diathesis. W. E. Fitch, Bedford, Pa.—p. 187.
Value of Narcosan for Narcotic Addiction: 1,700 Cases Treated Successfully. C. W. Scheib, New York.—p. 191.
Visualization of Female Pelvic Viscera. H. Cohen, New York.—p. 194.
Eponyms of Medical Electricity. H. Goodman, New York.—p. 197.
Itch. J. W. Shuman, Los Angeles.—p. 198.
Satisfactory Control of Hypertension. L. Paine and J. C. Teas, New York.—p. 200.
Irradiated Ergosterol in Parkinson's Disease. E. H. Eising, New York.—p. 201.
Routine Roentgen Examination of Digestive Organs; Uselessness and Dangers. A. L. Soresi, New York.—p. 203.
Practical Points of Colostomy. J. B. Carnett and J. C. Howell, Philadelphia.—p. 208.
Megacolon in Adult: Four Cases. Z. Sagal, New York.—p. 210.
Huge Idiopathic Dilatation of Colon in Adult. J. Buckstein, New York.—p. 214.
Treatment of Colon Infection. J. W. Wiltsie, Binghamton, N. Y.—p. 215.
Simplifying Rectal Surgery: Hemorrhoidectomy. W. F. Burrows and E. C. Burrows, New York.—p. 216.
Anal Fissure and Ulcer. A. B. Jamison, New York.—p. 218.
Two Cases of Pneumococcic Meningitis. S. Goldberg, Philadelphia.—p. 219.
I. Leukopenia, Gangrenous Appendicitis, Colon Bacillus Peritonitis. II. Streptococcus Hemolyticus Meningitis and Septicemia Due to Streptococcus Hemolyticus Infection of Umbilicus. S. Rubin, Philadelphia.—p. 221.

Medicine, Baltimore

8: 1-157 (Feb.) 1929

Toxemias of Pregnancy. H. J. Stander, Baltimore.—p. 4.

Military Surgeon, Washington, D. C.

64: 169-360 (Feb.) 1929

Use of Standardized Tuning Forks and Hearing Tests in Military Service. R. Sonnenschein and M. A. Reasoner.—p. 169.
Report on Fourth International Congress of Military Medicine and Pharmacy. W. S. Bainbridge.—p. 187.
Value of Erythrocyte Sedimentation Reaction in Pulmonary Tuberculosis. J. S. Diasio.—p. 228.
Cardiac Cripple of Pre-Army Age. H. M. Moses.—p. 231.
Treatment of Fractures of Clavicle with Bone Plates. J. W. Davis.—p. 241.
Conquest of Yellow Fever. M. W. Ireland.—p. 244.
Strange Case of Surgeon General Hammond. L. C. Duncan.—p. 252.

Minnesota Medicine, St. Paul

12: 65-120 (Feb.) 1929

Importance of Stained Preparations in Study of Amebic Infections. W. A. Riley, Minneapolis.—p. 65.
Surgical Treatment of Uterine Prolapse. J. C. Masson, Rochester.—p. 67.
Congenital Malformations of Uterus and Vagina: Three Cases. F. E. Kliman and J. R. Manley, Duluth.—p. 71.
Veronal and Paraldehyde Addiction and Poisoning. G. N. Ruhberg, St. Paul.—p. 75.
Preoperative Treatment of Exophthalmic Goiter. S. F. Haines, Rochester. —p. 79.
Foreign Bodies In and Near Joints. E. S. Geist, Minneapolis.—p. 82.
Delayed Traumatic Intracranial Hemorrhage. E. M. Hammes, St. Paul. —p. 86.
Chronic Nontuberculous Pulmonary Disease in Childhood. C. A. Stewart and E. S. Platou, Minneapolis.—p. 91.
Paralysis of Serratus Anterior Muscle by Trauma of Long Thoracic Nerve: Case. L. Dunn, Minneapolis.—p. 95.
Unilateral Congenital Absence of Tube and Ovary: Case. H. R. Leland, Minneapolis.—p. 96.
Persistence of Cloaca: Case. S. G. Major, St. Paul.—p. 96.

Missouri State M. Assoc. Journal, St. Louis

26: 51-102 (Feb.) 1929

Industrial Eye Injuries: Cases. E. P. North and V. L. Jones, St. Louis. —p. 51.
Conjunctivitis. A. N. Lemoine, Kansas City.—p. 55.
Epidemic Meningitis. A. Sophian, Kansas City.—p. 59.
Nasal Sinus Problem. E. S. Connell, Kansas City.—p. 61.
Thrombosis of Venous System: Late Physical Effects and Symptomatology with Special Reference to Lower Extremities. R. Mueller, St. Louis. —p. 65.
Simple Tests in Study of Kidney Diseases. F. C. Narr, Kansas City. —p. 67.
Pulmonary Tuberculosis Combined with Carcinoma of Lung. E. A. Graham, St. Louis.—p. 70.
Myxedema with Partial Heart Block and Severe Anemia Both of Which Disappeared Under Thyroid Therapy. D. Luten, St. Louis.—p. 73.

Nebraska State Med. Journal, Norfolk

14: 41-96 (Feb.) 1929

Low Back Injuries. F. D. Dickson, Kansas City, Mo.—p. 41.
Management of Surgical Diseases of Thorax. C. Emerson, Lincoln. —p. 49.
Practical Surgery: Increased Mortality in Important Surgical Diseases, Especially in Abdominal Surgery. J. E. Summers, Omaha.—p. 52.
Medicolegal Aspect of Compensation Act. G. L. DeLacy, Esq., Omaha. —p. 56.
Purpose and Policy of University of Nebraska Hospital. J. J. Keegan, Omaha.—p. 64.
Anterior Poliomyelitis. B. F. Williams, Lincoln.—p. 67.
Medical Legislation. F. B. Young, Gering.—p. 70.
Nasal Sinus and Ear Infections in Children and Infants. J. B. Naftzger, Sioux City, Iowa.—p. 73.
Roentgen Examination, Gastro-Intestinal Tract. R. W. Fouts, Omaha. —p. 75.
Diagnosis and Treatment of Toxic Goiter. L. W. Rork, Hastings.—p. 78.
What Can General Practitioner Do for Rectal Emergencies? H. Smith, Franklin.—p. 81.
Intestinal Obstruction Due to Pinworms (Oxyuris Vermicularis): Case. A. C. Stokes, Omaha.—p. 83.
Phases of Medical Jurisprudence. F. S. Howell, Omaha.—p. 84.

New England Journal of Medicine, Boston

200: 313-360 (Feb. 14) 1929

Reflux of Duodenal Contents Through Common Bile Duct: Two Cases. L. Davis, Boston.—p. 313.
•Nontuberculous Spondylitis. D. Carleton, Springfield, Mass.—p. 320.
Preoperative Treatment. J. W. Jameson, Concord, N. H.—p. 326.
Staphylococcus Septicemia with Metastatic Osteomyelitis. J. P. Bowler and J. J. Boardman, Hanover, N. H.—p. 327.
•Oxygen Therapy in Treatment of Pneumonia and Postoperative Pulmonary Complications. R. S. Palmer, Boston.—p. 330.
Incidence of Tuberculous Infection in School Children. H. D. Chadwick and D. Zacks, Westfield, Mass.—p. 332.

200: 361-416 (Feb. 21) 1929

Endocrine Factors in Dementia Praecox. R. G. Hoskins, Boston.—p.361.
Treatment of Arthritis. F. C. Hall, Boston.—p. 369.
Treatment of Arthritis, Rheumatism and Neuritis with Chemotherapy and Physical Therapy. W. M. Bartlett and E. Suneson, East Orange, N. J.—p. 375.
Survey of Hospitals of Worcester District. L. C. Miller, Worcester, Mass.—p. 377.
Diagnosis of Mild Cases of Poliomyelitis. E. Friedman, Boston.—p. 384.
Field and Functions of Private Health Organization. D. B. Armstrong, New York.—p. 386.
Cough Due to Hypersensitiveness to Orris. A. Colmes, Boston.—p. 389.
Combined Chancres of Penis and Lip: Case. E. W. Karcher, Boston. —p. 391.

Nontuberculous Spondylitis.—Five cases of nontuberculous spondylitis which followed some acute pulmonary infection are reported by Carleton. In four cases the spondylitis occurred from two to five months after the initial infection. There were three patients with lumbar abscess and two without abscess. In two with abscess, pneumococcus and *Staphylococcus aureus* were found in cultures.

Oxygen Therapy in Treatment of Pneumonia.—Palmer reports some of his experiences with the tent method of administering oxygen in urgent cases of lobar pneumonia, in some of the more severe postoperative pulmonary complications, and in a few other conditions presenting clinical evidence of anoxemia. He says that it is possible with this apparatus to maintain the patient continuously in an atmosphere of from 40 to 60 per cent oxygen, and at the same time to force fluids and carry out the usual nursing care. To obtain the maximum benefit from this procedure it should be instituted at the first indication of cyanosis.

New Jersey M. Society Journal, Orange

26: 93-190 (Feb.) 1929

Illumination and Asthenopia. E. J. Marsh, Paterson.—p. 93.
Prevention and Special Treatment of Scarlet Fever. E. H. Place, Boston.—p. 102.
Experience with Special Biologics in Treatment of Pneumonia. R. L. Cecil, New York.—p. 111.
Splenectomy for Hemorrhagic Purpura of Childhood. W. B. Stewart, Atlantic City.—p. 116.
Thymic Enlargement. H. B. Silver, Newark.—p. 124.
Anomalous Peritoneal Membranes. F. H. Glazebrook, Morristown.—p. 130.
Diagnosis and Treatment of Tachycardias. L. Levin, Trenton.—p. 138. —p. 138.
Certain Relationships of Gastric Hemorrhage and Gastrostaxis. C. A. Pons, B. M. Meine and V. A. Blenkle, Long Branch.—p. 143.
Modified Ureteral Catheter for Bladder Drainage. G. T. Spencer, Elizabeth.—p. 149.
Diazo Test in Nephritis. R. A. Kilduffe, Atlantic City.—p. 150.
How Family Doctor Can Increase Usefulness and Income. W. M. Johnson, Winston-Salem, N. C.—p. 155.
Is Physician Worthy of His Hire? J. H. Bradshaw, Orange.—p. 157.

New Orleans M. & Surg. Journal

81: 527-599 (Feb.) 1929

Fungus Infections of Hands and Feet. F. M. Johns, New Orleans. —p. 527.
Ethylene-Oxygen Anesthesia in General Surgery. J. T. Nix, New Orleans.—p. 533.
Diseased Gallbladder. C. W. Allen, New Orleans.—p. 548.
Personal Experiences in Abdominal Surgery Emergencies. I. Cohn, New Orleans.—p. 551.
Thyrotoxicosis, Symptoms and Importance of Early Recognition. A. G. Payne, Greenville, Miss.—p. 564.
Spinal Cord Lesions. D. L. Kerlin, Shreveport, La.—p. 566.
Analysis of History in Diagnosis of Hyperchlorhydria. O. W. Bethea, New Orleans.—p. 573.
Coccogenic Infections. T. A. Maxwell, New Orleans.—p. 575.

Tennessee State M. Assoc. Journal, Nashville

21: 371-410 (Feb.) 1929

Constitutional Inadequacies. R. B. Wood, Knoxville.—p. 371.
Diagnosis of Surgical Diseases of Spleen. W. D. Haggard and F. B. Dunklin, Nashville.—p. 374.
•New Stain (Safranin) for Tubercle Bacillus. C. G. Ransom, Nashville. —p. 381.
Injuries of Eye. T. C. Chapman, Brownsville.—p. 382.
Familial Cataract. R. S. Leach, Knoxville.—p. 384.
New Methods of Traction in Fracture Work. E. T. Newell, Chattanooga. —p. 388.
Sarcoma of Mastoid. H. Harris, Memphis.—p. 390.

New Stain (Safranin) for Tubercle Bacillus.—Ransom uses safranin instead of carbol fuchsin. The solution consists of 100 cc. of distilled water, 10 cc. of tenth-normal solution of sodium hydroxide, or 1 cc. of a normal solution, and 4 Gm. of safranin. The solution is easily prepared and is more stable and less liable to precipitation. The bacilli are stained a brilliant red over a dull deep red. The likelihood of overlooking tubercle bacilli in liquid sputums is said to be much lessened.

West Virginia M. Journal, Charleston

25: 65-128 (Feb.) 1929

Efficiency and Safety of Prevention of Goiter. O. P. Kimball, Cleveland.—p. 65.
Rheumatic Fever. W. B. Porter, Richmond, Va.—p. 79.
Benign Prostatic Hypertrophy. R. D. Gill, Wheeling.—p. 84.
Hypothyroidism: Diagnosis and Treatment. A. H. Hoge, Bluefield.—p. 87.

Gangrenous Balanitis. A. S. Lloyd, Charleston.—p. 89.
When is Gonorrhea Cured? R. J. Condry, Elkins.—p. 91.
Early Diagnosis of Acute Poliomyelitis. G. M. Lyon, Huntington.—p. 92.
Human Factor in Caring for Sick. F. LeM. Hupp, Wheeling.—p. 94.
Relation of Hospital Staff to Directorate and Superintendent. H. M. Hall, Wheeling.—p. 99.

Wisconsin Medical Journal, Madison

28: 43-100 (Feb.) 1929

Heart Disease: Bacteriology. W. S. Middleton, Madison.—p. 43.
Id.: Roentgen Examination. F. J. Hodges, Madison.—p. 46.
Coronary Infarction with Survival. J. A. Evans, La Crosse.—p. 47.
Heart Disease: Some Economic Phases. M. F. Rogers, Milwaukee.—p. 50.
Hyperthyroidism and Glycosuria: Relationship. A. W. Bryan, Madison.—p. 54.
Iron in Nutrition: New Inorganic Factor as Supplement to Iron in Hemoglobin Building. E. B. Hart, Madison.—p. 60.
Otogenous Extradural Abscess: Clinical Symptoms. A. Kovacs, Milwaukee.—p. 62.
"Stop—Look—Listen." F. I. Drake, Milwaukee.—p. 64.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 233-280 (Feb. 9) 1929

Unusual Symptoms Due to Enlargement of Prostate. G. G. Turner.—p. 233.
Radium and Its Action. W. E. Dixon.—p. 238.
Use of Cautery in Operations on Stomach. C. A. Pannett.—p. 240.
Pericarditic Pseudocirrhosis of Liver, or Pick's Disease: Case. A. W. Gill and T. Craig.—p. 241.
*Inoperable Carcinoma of Breast Treated with Radium. R. Ward.—p. 242.
*Effects of Anesthesia, Operation and Certain Other Factors on Glycemia. E. Mekie and H. Miller.—p. 244.
Pressure Neuritis of Deep Palmar Branch of Ulnar Nerve. C. Worster-Drought.—p. 247.
Cerebral Angiospasm. A. S. Gubb.—p. 247.
Idiopathic Hemorrhage in New-Born. H. Geary.—p. 248.

Inoperable Carcinoma of Breast Treated with Radium.—Ward analyzes the results of radium therapy in 510 cases of carcinoma of the breast in which the disease had extended to tissues outside the breast itself. Of the 510 patients, 112 were alive at the end of three years. Of 405 patients, fifty-one were alive at the end of five years. Of eighty-two patients, five were alive at the end of ten years. All those patients on whom a recent report has not been received are regarded as having died at the date of the last report. A large number of patients (about 40 per cent) showed marked temporary benefit, even though they succumbed within three years of treatment. Most of the cases were too advanced to offer any hope of cure, but much was done to relieve suffering and to control the progress of the disease. Distressing symptoms were often alleviated, and in many cases life was prolonged for a considerable number of years. Ulcerations were healed or prevented, the patient thereby being relieved of a good deal of pain. Cutaneous nodules disappeared, while large swellings became smaller and less fixed, often regressing to such an extent that only a residual thickening could be felt. Relief was frequently brought about even in cases in which there was marked lymphatic obstruction with edema of the arm, the limb becoming less swollen and more movable.

Effects of Anesthesia, Operation and Other Factors on Glycemia.—Mekie and Miller investigated the effect on the blood sugar of a surgical operation carried out under routine conditions, and endeavored to ascertain the factors which influenced any changes observed. They assert that four factors at least predispose to a high preoperative level of the blood sugar, namely, acute infection, peritoneal irritation, shock and nervousness. Following operations under general anesthesia there is usually an increase in the blood sugar content, but there is never a hypoglycemia. The maximum rise is seen immediately after operation, and from this point there is a fall to the preoperative level, which is approximately reached in eight hours. There is a close relationship between the absolute rise of the blood sugar and the duration of the anesthesia. In cases of postoperative shock the blood sugar content is high. In spinal anesthesia there is evidence of only a small rise in the blood sugar content. Absorption from dextrose-saline solutions given rectally does not lead to any constant change in the blood sugar readings.

1: 281-332 (Feb. 16) 1929

Nature of Disease. H. Rolleston.—p. 281.
Volvulus of Intestine. R. P. Rowlands.—p. 287.
Use of Ultraviolet Rays in Diseases of Nose and Throat. A. Eidinow.—p. 289.
Radiographic Findings in 347 Painful Shoulders. J. F. Brailsford.—p. 290.
*Asthma in Children. R. H. Simpson and K. Stone.—p. 291.
*Use of Ephedrine in Asthma and Whooping Cough. H. H. Stewart.—p. 293.
*Symptomatic Treatment of Asthma. A. T. Todd.—p. 295.
Immediate Enucleation for Treatment of Quinsy. R. A. R. Wallace.—p. 296.
Glycerin Treatment of Puerperal Sepsis. S. A. McSwiney.—p. 297.

Treatment of Asthma in Children.—Nonspecific desensitization by repeated injections of small and gradually increasing quantities of old tuberculin was resorted to by Simpson and Stone in nine cases of asthma in children. The results have convinced them that old tuberculin is a most valuable ally in the treatment of asthma in children. Marked improvement has occurred during the course of treatment. An early improvement in the child's general condition is especially noticeable.

Use of Ephedrine in Asthma and Whooping Cough.—Stewart is convinced that ephedrine has a definite beneficial effect on moderate attacks of asthma, their number and severity being diminished or even completely aborted. It has no effect on severe attacks of either simple or complicated asthma. Its effect in pertussis is to relieve the violent cough, the whoop and the vomiting in mild or moderate cases. In severe cases there is no effect at all. The progress of the infection is not influenced, the relief being limited to the mechanical factor. Ephedrine appears to act by relieving the local spasm in the bronchoconstrictors. This spasm is produced by the irritant effect of the tough mucus on the mucous membrane, made hypersensitive by the toxins of *Bacillus pertussis*. By relief of this spasm the irritant mucus can be removed without the violent expiratory efforts or coughs which are usually necessary. The paroxysms are thus made shorter and less severe, and hence in favorable cases the whooping and vomiting disappear. Belladonna paralyzes the bronchoconstrictors, and thus aids the action of ephedrine, which stimulates the bronchodilators. If belladonna is given with ephedrine it is necessary to antagonize the "drying effect on the secretion" of the former drug by giving an expectorant. In bringing about this effect ephedrine in no way influences the course of the infection, but simply relieves the mechanical difficulty of removing the secretion and hence minimizes the exhausting efforts on the part of the child.

Symptomatic Treatment of Asthma.—Todd reports on his method of treatment, which does not replace the usual treatment but is an adjuvant. This "system" is not intended to be employed alone, except in asthma in children; in them it has given good results, and in a fair proportion there have been long intervals of freedom from symptoms. In adults the treatment is usually associated with some form of radiotherapy, either roentgen irradiation of the thorax or spleen or ultraviolet irradiation of the surface of the trunk; or it has been combined with some form of specific or nonspecific protein therapy. A calcium mixture should be administered for about six weeks before the attack is due. It contains calcium chloride, 15 grains (1 Gm.); simple syrup, 15 minims (1 cc.); water, 1 ounce (30 cc.). One ounce is a full dose. To this amount is added one-third minim (0.02 cc.) of atropine solution. It is given thrice daily for about two weeks and the result is watched. Then the amount of atropine is increased or diminished to that dosage which gives definite, but slight, dryness of the mouth. It is found that it is necessary to reach the lower level of toxicity to obtain alleviation with atropine. Children are given a slightly smaller dose; it is well known that children stand atropine well. The second part of the treatment is the administration of a caffeine mixture. This is given in drachm doses at the onset of symptoms, or before the onset when possible. In the event of regular nocturnal attacks a dose is taken before going to bed, and the bottle is kept at the bedside in order that another dose can be taken as soon as any symptom appears. It is quite safe to give several doses in twenty-four hours. This mixture is a solution of caffeine sodium iodide; sodium iodide;

dilute hydriodic acid, and decoction of coffee. Before the mixture is issued for use, from one-fourth to one-half grain (16 to 32 mg.) of ephedrine hydrochloride is added to each dose. Not more than 1½ grains (0.1 Gm.) of ephedrine should be administered in a day; otherwise unpleasant gastric and circulatory symptoms will be frequent. Children require a proportionately smaller amount.

Journal of Tropical Med. & Hygiene, London

32: 45-56 (Feb. 15) 1929

*Blood Transfusion as Curative Measure in Pernicious Anemia of Sprue. P. Manson-Bahr.—p. 45.
Nontoxic Treatment of Bilharzia Disease. F. G. Cawston.—p. 47.
*Plasmochin. A. R. Majumder.—p. 47.

Blood Transfusion as Curative Measure in Pernicious Anemia of Sprue.—Manson-Bahr is convinced that no other therapeutic measure gives such brilliant results in sprue anemia as does blood transfusion. Immediate and apparently permanent benefit has occurred even in patients who appeared to be moribund. The results of blood transfusion appear to be due not so much to the mechanical replacement of the destroyed red blood corpuscles as to the stimulation of the hematopoietic system. In two instances reported, more than one blood transfusion was necessary in order to obtain the desired result. The author feels that the actual amount of blood injected is a matter of secondary consideration. In one case brilliant results followed the injection of a comparatively small quantity of blood, namely, 70 cc. In very severe sprue anemia, the injection of a larger amount of blood than 300 cc. should not be attempted. The general stimulating effect of blood transfusion may be seen in this same case, a man who developed lobar pneumonia during convalescence and successfully surmounted it. In order to obtain the full benefits of blood transfusion, the strictest dietetic measures are necessary, as in ordinary sprue. The regeneration of the blood is greatly aided by the exhibition of solution of potassium arsenite. The initial dose should be 1 minim (0.06 cc.) three times daily, and it is gradually increased till the patient is taking 15 minims (1 cc.) daily. The arsenical treatment must be continued for three or four weeks, and after a period of a week resumed. No symptoms of arsenical intoxication have been seen by Manson-Bahr, but he says it is a possibility which must be guarded against. Occasionally, it was found advisable to supplement the action of the solution of potassium arsenite by intravenous injections of neoarsphenamine at weekly intervals. The routine dietetic treatment consisted to a great extent of liver soup. Though Manson-Bahr has prescribed liver treatment in sprue anemia for many years, such a striking and immediate and lasting erythroblastic response has never before been observed in patients not subjected to blood transfusion. In every case a reaction was noted immediately following blood transfusion. The more marked the reaction, the more immediate the results. An icteric tint of the skin and sclerotics was observed the day following transfusion; in one case a serum rash with urticaria broke out on the third day subsequent to transfusion and lasted three days. No other serious reactions were noted.

Plasmochin.—Majumder concludes that both plasmochin and plasmochin compound are powerful antimalarial drugs; combination with quinine appears to make them more powerful. Plasmochin has none of the disagreeable nervous symptoms of quinine, and no pronounced action on the unstriped muscle fibers, and is thus better tolerated by the stomach and the pregnant uterus. The toxicity of the drug is not apparently very great, as a baby of 2½ years did not show any reaction even after taking 1 grain (0.065 Gm.) of the drug in two hours. There is so far no reason to think that it is more risky than quinine and that it should not be taken except under skilled medical supervision.

Quarterly Journal of Medicine, London

1: 167-379 (Jan.) 1929

*Acute Eosinophilic Leukemia and Eosinophilic Erythroleukemia. J. Hay and W. H. Evans.—p. 167.
*Improvement of Diabetes in Pregnant Woman Due to Fetal Insulin. R. D. Lawrence.—p. 191.
*New Test of Renal Function. R. T. Brain and H. D. Kay.—p. 203.
*Etiologic Study of Primary Exophthalmic Goiter. H. G. Hill.—p. 217.
Causes of Auricular Fibrillation. J. Cowan.—p. 237.
*Stereoscopic Radiography of Coronary System. J. S. Campbell.—p. 247.
Treatment of Certain Forms of Infantile Atrophy with Atmospheres Enriched by Oxygen and Carbon Dioxide. E. F. W. McCrea and H. S. Raper.—p. 269.
*Quinidine Treatment of Auricular Fibrillation. J. Parkinson and M. Campbell.—p. 281.
Febrile Albuminuria: Pneumonia. L. C. Hill.—p. 305.
Schick Test. S. F. Dudley.—p. 321.

Acute Eosinophilic Leukemia and Eosinophilic Erythroleukemia.—Hay and Evans report two cases. The first was a case clinically identical with acute myelogenous leukemia, and showing splenomegaly, general glandular enlargement, a high leukocytosis, and intense infiltration of all the internal organs with eosinophil cells. The second case, which presented a more chronic course, showed the combination of polycythemia with an increased white count composed largely of polymorphonuclear eosinophils. A necropsy was made in both cases. From the study of the clinical condition, the blood, and the morbid histology, it appears that the first case was an unusual form of leukemia originating in the eosinophil system, and in every way comparable to acute myelogenous leukemia. The second case was regarded as one of polycythemia with eosinophilia, which can be compared with "eosinophilic leukemia" in the same way that Blumenthal's syndrome can be compared with the ordinary forms of myelogenous leukemia.

Improvement of Diabetes in Pregnant Woman Due to Fetal Insulin.—The course of a twin pregnancy in a diabetic woman is described by Lawrence. Up to the twenty-seventh week of the pregnancy the mother's carbohydrate tolerance deteriorated. From the twenty-eighth week until the end of the pregnancy a great improvement, to the extent of a tolerance to at least 100 Gm. of carbohydrate a day, took place. This increase in tolerance was not maintained after labor. It can therefore be ascribed only to fetal insulin aiding the diabetic mother. The mother's carbohydrate tolerance was slightly greater after than before pregnancy. A lowering of the renal threshold took place at the sixteenth week, but it returned to normal again at the thirty-fourth week. No increase in the ketosis or change in the fatty acid-dextrose ratio tolerance was observed when the loss of dextrose due to the lowered renal threshold in the early months and to the carbohydrate "drain" of the fetuses in the later months is taken into account. The pregnancy was complicated in the later months by severe edema due to salt retention and parenchymatous nephritis. This necessitated a cesarean section, by which two healthy twins were delivered.

New Test for Renal Function.—A new test of renal efficiency, the "glycerophosphate test," is described by Brain and Kay. It depends on the excretion of extra phosphorus in the urine in the hour following the intravenous injection of a standard quantity of organic phosphorus (550 mg.) in the form of sodium glycerophosphate. In normal persons or in patients not suffering from renal disease, at least 150 mg. of extra phosphorus is excreted in this period; in persons with renal impairment the amount varies from this figure down to 0 mg., depending on the severity of the renal impairment. The test is simple to carry out, and is not subject to certain errors associated with the urea concentration and phenolsulphonphthalein tests. At about 6 a. m. the patient is given a light breakfast, devoid of fat, in order to prevent, as far as possible, a lipemia. At 8:30 a. m. he is told to empty the bladder, and at 9:30 is given 400 cc. of water. At 10:30 a. m. the first (two hour) specimen of urine is collected and measured, and a portion is taken for total phosphorus analysis. (At this stage a resting blood sample may be taken, if required.) Ten cubic centimeters of glycerophosphate in approximately 50 per cent sterile solution is then slowly injected into the median basilic vein from a record syringe. The time is now taken. Exactly one hour after the end of the injection, the second sample of urine is collected (precautions being taken to empty the bladder completely), and measured. After the proteins have been precipitated with trichloracetic acid, phosphorus determinations (free and total phosphorus) are made in duplicate on both urinary samples, a modified Briggs method being used. The "normal" urinary excretion of phosphorus in milligrams per hour is calculated from the values in the first specimen (8:30-10:30 a. m.), and it is assumed that this rate would be maintained approximately in the next hour. By subtracting the

hourly "normal" value from the amount of organic plus inorganic phosphorus in the hour following the injection, the "excess phosphorus excretion" is obtained. Comparisons have been made, in forty-four cases of renal disease, between this test and the urea concentration and phenolsulphonphthalein tests. The information provided by the glycerophosphate test has been everywhere at least as valuable as that derived from the other two tests, and in certain instances, when there has been a divergence between them, the glycerophosphate test has agreed most closely with the clinical observations.

Etiologic Study of Exophthalmic Goiter.—Two hundred and six cases of primary exophthalmic goiter have been studied with special reference to the significance of the sex events in their etiology. Of these patients, 184 were females and twenty-three males. Of the 183 females, thirty-two were adolescent, sixty-three single, and eighty-eight married. Of the males, six were adolescent, four single, and thirteen married. The incidence of the disease was almost entirely limited to the period of active sex life, only one case occurring before puberty and only five after the climacteric. In 80 per cent of these cases the disease was precipitated by extrinsic factors: shock, mental stress and sepsis. In 50 per cent the two former factors were the cause, in 20 per cent the latter, while in 10 per cent they were combined. In the remaining 20 per cent there was no apparent extrinsic exciting factor. The sex events in the female—puberty, pregnancy, the puerperium and the climacteric—appear to be important predisposing factors, for the incidence of cases was considerably greater at these times. Of the 183 females, sixty-two, or approximately one third, developed the disease at the time of these events. Thirty per cent of the adolescent girls and 62 per cent of the women at the climacteric developed the disease in the same year as the beginning and the end of menstruation, respectively. Fifty-six and six-tenths per cent of the adolescent girls and 76.2 per cent of the women at the climacteric developed the disease within three years of these events. Of the seventy-one cases in married women during the childbearing period, 41 per cent developed during pregnancy, the puerperium, or after miscarriage. The incidence during the puerperium was double that during pregnancy. Of these seventy-one married women in the childbearing period, fourteen, or 19.7 per cent, had not had any pregnancy prior to the onset of the disease; thirteen, or 18.3 per cent, had had only one pregnancy, and fifteen, or 21.1 per cent, developed the disease during their first pregnancy or puerperium. Of the twenty-one women at the climacteric, seventeen were married and four single. Seventy-two per cent of the former had had two or more pregnancies. The low incidence of cases at the climacteric in single women is in keeping with the general decrease in the incidence in single women in later life.

Stereoscopic Roentgenography of Coronary System.—From a stereoroentgenographic study of 100 hearts, Campbell is convinced that variations in the anatomic distribution of the coronary vessels are very frequent and that they have a definite bearing on the clinical aspects of coronary disease.

Quinidine Treatment of Auricular Fibrillation.—Parkinson and Campbell studied twenty patients with paroxysmal, and forty-four with established fibrillation, in whom quinidine seemed more appropriate than digitalis. Nine out of eighteen patients with paroxysmal fibrillation were much improved by treatment with quinidine, the attacks being abolished or greatly reduced for as long as the patient was under observation; in one fourth the advantage was only temporary, and in the remainder there was no improvement at all. In forty-four selected patients with established fibrillation, normal rhythm was restored in thirty, or 68 per cent. The remaining 32 per cent failed to respond to quinidine. In twenty-three, more than half of all who were treated, normal rhythm was not only restored but maintained after an average period of more than two years, and once after five years. Four of these patients had short temporary relapses, which were readily brought to an end with quinidine. The other seven of the thirty in whom treatment was successful kept well for an average period of eighteen months before fibrillation recurred. Relapses were more likely to occur when quinidine was omitted or reduced. With two exceptions, all patients were strikingly better after the return of normal rhythm; some were much better than they had been previously when taking digitalis, and many are now leading such active lives that it is difficult to think that they could have been equally well if digitalis had been used. The results were best of all when there was no rheumatic valvular disease and no hyperthyroidism, for all those in whom the arrhythmia was the only evidence of heart disease still have normal rhythm after an average period of two years. Severe toxic effects were seen in two patients. Embolism, which occurred in two others but left no permanent disability, was not found any more frequently with quinidine than with digitalis. One patient died suddenly while taking quinidine. In paroxysmal cases the usual dose was 5 grains (0.32 Gm.) of quinidine two or three times a day. Patients in whom the disease was established were kept in bed and the dose was generally raised by 5 grains daily to 10 grains (0.65 Gm.) three times a day, unless normal rhythm was restored with a smaller dose. This took place most often with from 20 to 30 grains (1.3 to 2 Gm.) a day.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 87-143 (Feb. 2) 1929

Large Sacrococcygeal Tumor in New-Born Child. H. L. Rocher, A. Bonnard and R. Guérin.—p. 100.
Perforated Gastric and Duodenal Ulcers (Eleven Cases). Polony.—p. 105.
*Immediate and Late Results of Splenectomy in Chronic Recurrent Hemorrhagic Purpura. J. Quénu and S. M. Stoïanovitch.—p. 111.
*Myeloplaxoma of Lower Part of Tibia. R. Gouverneur.—p. 121.
Clinical Study of 2,207 Cases of Spinal Anesthesia. G. Cotte.—p. 127.
Complications in Intra-Uterine Injections of Iodized Oil. Brun and Cortesi.—p. 134.
Sessile Cyst of Head of Pancreas. Brisset.—p. 136.

Immediate and Late Results of Splenectomy in Chronic Recurrent Hemorrhagic Purpura.—Quénu and Stoïanovitch report a case of recurrent hemorrhagic purpura with attacks of profuse menorrhagia, epistaxis, hemoptysis and cutaneous hemorrhages in a woman, aged 49, whose history was entirely negative. Serum therapy, calcium therapy, liver therapy and blood transfusions were of no avail, but immediately after the splenectomy (the spleen was small) the hemorrhages stopped, the number of hematoblasts increased rapidly, and the bleeding time dropped from seventy-two minutes to five and one-half minutes in one day, and to two and one-half minutes by the tenth day. For seven months the patient was perfectly well; her weight increased 7 pounds (3.2 Kg.), and menstruation became normal. The hemorrhages reappeared, however, and were refractory to treatment. They patient died eleven months after the splenectomy was done.

Myeloplaxoma of Lower Part of Tibia.—Gouverneur reports a case of myeloplaxoma of the inferior part of the tibia in a girl, aged 19. The condition was interesting because of its symptomless evolution and complete cure. The tumor attracted attention only when the lower part of the tibia was almost completely destroyed. Because the periosteum was involved in places, and the collateral venous circulation was markedly developed, a malignant condition was suspected. The tumor was excised and the resulting tibial cavity grafted with some periosteosseous fragments secured from the other tibia. After three months of immobilization, restoration of function was complete.

55: 145-178 (Feb. 9) 1929

*Perforation of Gallbladder into Peritoneal Cavity, Cured by Conservative Operation. M. Larget and J. P. Lamare.—p. 150.
Treatment of Pseudarthrosis by Bone Graft. Aumont.—p. 154.
*Late Conservative Surgical Treatment of Gangrene of Foot Occurring After Ligation of Femoral Artery. R. Leibovici.—p. 157.
*Spontaneous Rupture of an Atheromatous Common Iliac Artery. F. Ferrari.—p. 161.
Fistulization of Chronic Appendicitis into Fallopian Tube and into Uterus. H. Gaudier.—p. 164.
Preoperative Diathermic Treatment of Cancer of Cervix. Heitz-Boyer.—p. 167.
Surgical Treatment of Gonorrheal Talalgia. A. Schwartz.—p. 174.

Perforation of the Gallbladder into Peritoneal Cavity.—Larget and Lamare report a case of perforation of the gallbladder in a woman, aged 35, simulating an attack of acute appendicitis. At laparotomy they found the abdominal cavity filled with bile, and because the gallbladder was small, fibrous and surrounded by adhesions, only drainage was done. The patient made a complete recovery.

Late Conservative Surgical Treatment of Gangrene of Foot Occurring After Ligation of Femoral Artery.—Leibovici reports a case of gangrene of the foot occurring in a man, aged 32, after ligation of the femoral artery to check a hemorrhage caused by a wound in the middle part of the thigh. In the beginning the whole leg seemed involved and the question of an early amputation in the lower part of the thigh arose, but the author decided to wait. The line of demarcation appeared at the metatarsal line about a month later. Syme's operation was performed and the patient recovered. The muscles of the leg, however, were atrophied.

Spontaneous Rupture of an Atheromatous Common Iliac Artery.—Ferrari reports the case of a man, aged 71, who after a mental shock felt a severe pain in the left iliac fossa and in a few days developed signs of a large suppurating retroperitoneal nonpulsating tumor of the left iliac fossa with extension to the scrotum. There were symptoms of general infection, associated with a temperature of 39.6 C. (103.3 F.), a pulse rate of 140, constipation and poor general condition. There were no signs of anemia, and neither pain nor any disturbance of the circulation in the corresponding (left) leg was present. The patient died from a profuse hemorrhage at the beginning of the laparotomy. The tumor proved to be a large hematoma. There was also found a perforation of the left common iliac artery, caused by a partially detached, calcified atheromatous plaque. The lumen of this artery was considerably narrowed by the atheromatous process, which involved all the large vessels.

Lyon Médical, Lyons

143: 153-184 (Feb. 10) 1929

*Treatment of Hemorrhoids by Diathermy and Diathermocoagulation. G. Cotte.—p. 153.

Treatment of Hemorrhoids by Diathermy and Diathermocoagulation.—Cotte reports two cases of large confluent hemorrhoids of long standing with prolapsus recti, cured by diathermocoagulation under local anesthesia, but without dilation of the rectal sphincter. The author thinks that diathermocoagulation should be given a place among the radical operations for hemorrhoids, such as excision, ligation or resection of the rectal mucosa, but that diathermic treatment alone (not diathermocoagulation) is only palliative. It has indisputable analgesic, and antispasmodic effects, but it should not be used in cases of hemorrhoids with fissure or prolapse, or in acute inflammatory or thrombotic complications.

Presse Médicale, Paris

37: 201-216 (Feb. 13) 1929

Cure of Anuria Due to Mercurial Poisoning by Unilateral Renal Decapsulation. R. Turpin, S. Laurent and C. O. Guillaumin.—p. 201.
"Lysovaccinotherapy" in Bronchopneumonia. L. Duchon.—p. 203.
*Fatal Complications in Dengue. P. Schrumpf-Pierron.—p. 206.

Fatal Complications in Dengue.—Schrumpf-Pierron observed only one death (in a woman, aged 73) in 5,000 cases of dengue that occurred in Cairo. But if dengue occurs in the course of some chronic diseases, such as nephritis, cardiac disease, tuberculosis and diabetes, it may accelerate their evolution. The most dangerous period, showing the highest number of deaths (by syncope), is the time after the fall of the temperature, when the patients consider themselves cured but when the disease is in its third, often a latent, stage.

Revue Neurologique, Paris

36: 1-160 (Jan.) 1929

Posttraumatic Amyotrophic Lateral Sclerosis with Myodystonic Reaction. G. Soderbergh and E. Sjovall.—p. 1.
Catatonic Syndrome. H. de Jong and H. Baruk.—p. 21.
Pathogenesis of Tabetic Arthropathies. G. R. Lafora.—p. 32.
Syringobulbia. A. Austregesilo and J. V. Celares.—p. 35.
*Unusual Form of Lingual Tic. C. Dubois.—p. 40.
*Intraspinal Hydatid Cyst. Benhamou and Goinard.—p. 46.

Unusual Form of Lingual Tic.—In the case reported by Dubois one could observe slow movements of propulsion and retraction of the tongue, which were less pronounced during the process of chewing and disappeared during sleep. The patient was 33 years old. He had previously had two attacks of paralysis (hemiplegia at the age of 2 years, and paraplegia at the age of 22, with persistence of traces of paralysis in the right arm and right leg), and a slight form of epidemic encephalitis about six years before the beginning of the lingual tic. The Wassermann reaction, the spinal puncture, roentgenograms and ophthalmoscopic examination were negative, but the general aspect of the patient suggested the possibility of a mild degree of parkinsonism. Therefore, the author thinks that this form of lingual tic was caused by some lesions of the corpus striatum.

Intraspinal Hydatid Cyst Simulating Pott's Disease.—Benhamou and Goinard report a case of intraspinal hydatid cyst in a girl, aged 17, with signs of compression of the spinal cord at the level of the tenth dorsal vertebra simulating Pott's disease. There was 3.45 Gm. of albumin in the cerebrospinal fluid, but only two cells were seen per field. At exploratory laminectomy they found an intraspinal hydatid cyst, the size of a hazelnut, in communication with another larger hydatid cyst situated on the lateral aspect of the tenth dorsal vertebra in the soft paravertebral tissues.

Schweizerische medizinische Wochenschrift, Basel

59: 121-144 (Feb. 9) 1929. Partial Index

Isolation of Group-Specific Antigens of Human Erythrocytes. C. Hallauer.—p. 121.
*Fat-Free Dried Substance of Milk. W. Prausnitz.—p. 123.
Iodine and Goiter with Regard to a Motion to Introduce Iodized Table Salt Throughout Switzerland. E. Bircher.—p. 123.
Newer Points of View in Diagnosis and Treatment of Eye Tuberculosis: Review. E. Werdenberg.—p. 126.
Importance of Diagnostic Curettage and Biopsy. L. Stierlin.—p. 128. C'en.
*Potassium Iodide in Cutaneous Actinomycosis of Hand. B. Galli-Valerio and L. Ribordy.—p. 131.

Fat-Free Dried Substance of Milk.—Prausnitz investigated the variations that occur during the year in the fat-free dried residue of milk. He reports his experiences with five cows of different age and breeds, observed during several months. Working on the basis of Nottbohm's reports, he noticed a strong decrease of albumin and lactose during April and another during July and August. While Nottbohm attributes this phenomenon to the calving of the cows, Prausnitz found it as marked in cows that did not calve that year. The author suggests further investigations to ascertain the cause of this occurrence.

Potassium Iodide in Cutaneous Actinomycosis of Hand.—Galli-Valerio and Ribordy studied actinomycosis in man and report that the following varieties are found in Europe: cervicofacial, 60 per cent of the cases; pleuropulmonary, 13 per cent; abdominal, 15.7 per cent; parietal, 4.5 per cent; cutaneous and in the extremities, 2.2 per cent; cerebral, 3.9 per cent. Cutaneous actinomycosis is rare in Europe, while it is the most frequently observed form in hot countries where the skin is less protected by clothes. The authors report the case of a peasant, aged 52, who had been healthy except for facial erysipelas at the age of 40 and sycosis of the mustache at 45. In 1925 he pricked his index finger while loading a hay wagon. He did not take care of the puncture. Six months later he consulted Ribordy, who suspected actinomycosis. The patient did not return, and for two years he applied all kinds of drugs and ointments prescribed on the basis of a wrong diagnosis. Finally, he came to Galli-Valerio who diagnosed the original actinomycosis which, as a result of various cutaneous infections, had in the meantime spread all over the hand. He was sent back to Ribordy, who treated him with potassium iodide, and within three months the improvement was so great that the patient could return to his work which he had abandoned for two years. A few months later he recovered completely, but the finger remained stiff.

Clinica Chirurgica, Milan

31: 1291-1406 (Dec.) 1928

*Undiagnosed Fractures of Spine. C. R. Fumagalli.—p. 1291.
*Abscesses of Spleen. A. Miani and G. Dagnini.—p. 1318.

Undiagnosed Fractures of Spine.—Fumagalli points out that, between the grave cases of spinal fracture in which the diagnosis presents no difficulties, and those that are benign and heal often without being recognized, there is a series of spinal fractures which, at first, do not present the usual signs of fracture and hence often escape diagnosis, but which secondarily are associated with grave bone and articular changes of the

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spinal column, or with more or less marked late nervous disturbances. In some cases the working capacity is notably reduced. Seven roentgenograms illustrate these unrecognized lesions. From the medicolegal point of view these lesions are highly important. The only means of reaching a sure diagnosis is radiography carefully carried out and interpreted wisely and early. One must thoroughly understand the lesions in order not to make serious mistakes in the evalution of the duration and the degree of incapacity for work. One must be very circumspect in the reports furnished to the accident insurance companies. Some examiners are too hasty in concluding that work may be immediately resumed, because of the slightness of symptoms, which may be improving rapidly. Many workmen are thus allowed to return too early to heavy work, with the result that they must soon abandon it again. In every case, temporary incapacity should be of sufficiently long duration to obviate the risk of a complication produced by the premature resumption of work, which might compel the accident insurance company to pay a permanent invalidity award, because of the functional disorders arising and not susceptible of improvement. On the other hand, a patient adequately treated may recover completely, or at least with few traces of permanent disability. The permanent incapacity is usually estimated at from 20 to 40 per cent. Treatment should be instituted without delay as soon as the diagnosis is established. The therapeutic indications are reflected above all by the nervous disorders, and the first care is to determine with the greatest precision whether the compression is due to a bone displacement, an exuberant callus or the organization of a hematorachis, and to discover the degree of integrity of the cord.

Abscesses of the Spleen.—Miani and Dagnini hold that even though it may be possible, from the standpoint of the condition of the patient and the absence of perisplenic adhesions, to proceed with splenectomy for a large central abscess or for multiple abscesses of the spleen, the indications for such intervention must be based on the individual case. One must, in other words, consider not only the anatomic possibilities that permit such an operation but also the disease that was the cause of the abscess itself, for, while the removal of the spleen constitutes, for a posttraumatic abscess or for an abscess resulting from distant and localized suppurations, the sole danger inherent in the operative act, the removal of an abscess that has developed in the course of certain infectious diseases (for example, an acute stage of typhoid, puerperal fever, and the like) must not be considered from the standpoint of the operative dangers alone, but also (and essentially) with reference to the greater dangers involved in the removal of the spleen in infectious diseases.

Semana Médica, Buenos Aires

36: 61-120 (Jan. 10) 1929

*Metamyelocytic Formula for Diagnosis of Tuberculosis. C. Fonso Gandolfo and C. García Bañón.—p. 61.
*Gastric Cancer on Ulcer Base. D. del Valle, Jr., and D. Brachetto-Brian.—p. 75.
Fractures of Articular Meniscus of Knee: Nine Operations. J. Valls and C. E. Ottolenghi.—p. 85.
Osteomyelitis of Superior Maxilla in Infants. A. M. Cavazzutti.—p. 95.
Successful Use of Belts in Treatment of Ptosis. M. J. Barilari and M. Margulis.—p. 96.
Wernicke's Aphasia in Puerperium. A. J. Guiroy and L. Rosenwaser.—p. 100.
Excision of Perforating Juxtapyloric Ulcer. M. J. Vernengo.—p. 105.
New Results in Treatment of Tuberculosis with Methylated Antigen. L. Nègre, A. Boquet and J. Valtis.—p. 109.
Treatment of Pulmonary Tuberculosis with Antimony. P. Moxey.—p. 113.

Metamyelocytic Formula for Diagnosis of Tuberculosis.—Fonso Gandolfo and García Bañón found that, the more serious the tuberculous processes, the larger the number of metamyelocytes in the blood (more than 30 to 40 per cent in tuberculous cachexia). In their investigations they could not find metamyelocytes in the blood of healthy persons; in cancer their percentage is small (5 or 6). Few leprous persons have any metamyelocytes in the blood. The interpretation that the authors give to the metamyelocytic formula is as follows: If five metamyelocytes are present for every hundred normal blood cells, it is an indication of a doubtful result; if more than 5 per cent, a positive result; from 5 to 15 per cent means tuberculosis, with good chances of recovery; from 15 to 25 per cent, a somewhat serious tuberculosis, especially an initial tuberculosis; more than 25 per cent is quite serious; more than 40 per cent is very serious; more than 50 per cent indicates cachetic tuberculosis or miliary tuberculosis; more than 60 per cent indicates a preagonal or agonal condition. The metamyelocytic formula is specific in pulmonary tuberculosis, it has great prognostic and diagnostic value. The presence of metamyelocytes in the peripheral blood is caused by the tuberculosis toxin in the body.

Gastric Cancer on Ulcer Base.—The patient of del Valle and Brachetto-Brian, aged 39, had suffered from gastric disturbances for ten years. Finally a diagnosis of appendicitis was made and the appendix was removed. The gastric disturbances continued, however. The patient complained of a burning sensation in the stomach and pain in the epigastrium. A diagnosis of gastric ulcer was made. At an exploratory laparotomy, the antrum, the pylorus and the duodenal bulb were successfully resected. The patient at the beginning of his trouble had an antrum pyloritis, which later became erosive and polypoid and was complicated by two secondary conditions: a serpiginous ulcer and gastric cancer. The external aspect of the organ at the time of operation did not indicate the important anatomicopathologic lesions which were found later. The authors believe that this case emphasizes the importance of gastrectomy in the treatment of peptic ulcer.

36: 121-180 (Jan. 17) 1929

*Malignant Endocarditis of Slow Evolution. T. Martini and M. Joselevich.—p. 121.
Perforations of Gallbladder into Peritoneal Cavity in Course of Biliary Lithiasis. J. M. Fazio.—p. 140.
Scarlet Fever and Scarlatiniform Diseases. R. Cucullu and T. A. Tonina.—p. 158.
*Gonococcal Arthritis in Child, Aged Three Years. M. T. Vallino and J. M. Macera.—p. 164.
Fracture of Surgical Neck of Scapula. O. J. Ratto and L. O. Casanovas.—p. 167.
New Test for Citric Acid and Its Salts. V. Arreguine, Jr.—p. 173.
Use of Waste Products of Sugar Cane as Cheap and Effective Larvicide. E. R. Rickard, P. Diaz Quieta and A. Núñez.—p. 174.
Flocculation Test in Diagnosis of Syphilis. A. Prunell.—p. 176.

Subacute Malignant Endocarditis.—Martini and Joselevich report eight cases of secondary infection in cardiac patients. Only two of these patients gave a history of rheumatism. In no case was the endocarditis associated with syphilis. Four of the eight patients presented at necropsy the characteristic lesions of conus arteriosus: aortic stenosis associated with a varying degree of insufficiency and with mitral lesions. One patient had meningeal hemorrhage. Lumbar puncture gave relief from the meningeal symptoms, but the patient's general condition became worse. A diagnosis of subacute endocarditis was made, and was confirmed at necropsy. Clubbing of the fingers is a valuable sign in the diagnosis of subacute endocarditis. One patient, aged 39, died soon after admission to the hospital. Necropsy confirmed the diagnosis, which had been based on the clubbed fingers and toes.

Gonococcal Arthritis in Child.—Vallino and Macera's report the case of a child, aged 3 years, with gonococcal vulvovaginitis; after some days an intensely painful swelling of the metatarsal articulation was noted. The daily administration of 4 Gm. of sodium salicylate did not give any relief. Antigonococcal vaccine injections caused the pain and the edema to disappear. The vulvovaginitis was somewhat intractable, but eventually it improved and finally disappeared completely.

Deutsches Archiv für klinische Medizin, Leipzig

163: 1-128 (Feb.) 1929

*Lead Encephalopathy. J. Gelman.—p. 1.
*Extrasystole in Diabetic Coma. H. Strothmann.—p. 14.
*Thrombosis of Splenic Vein. F. Seeber and G. Spröhnle.—p. 19.
*Relation Between Swelling of Various Tissues Following Ingestion and Their Digestibility. H. von Hoesslin.—p. 28.
*Relation Between Basal Metabolism and Respiratory Quotient. D. Jahn and R. Sturm.—p. 39.
Chemical Status of Blood in Hypertrophy of Prostate. F. Lickint.—p. 51.
Glycolytic Power of Blood. S. Donhoffer and M. Mittag.—p. 65.
Isolated, Complicated Dextrocardia. H. Strothmann.—p. 76.
*Kidney Disease in Bone and Joint Tuberculosis. S. Simon.—p. 87.
*Roentgen Treatment of Erythremia. G. Hofheinz.—p. 103.

Types of Lead Encephalopathy.—Gelman reports three cases of lead intoxication in each of which a different form of lead encephalopathy was present: psychic depressive, epileptic and eclamptic.

Significance of Extrasystole in Circulatory Weakness in Diabetic Coma.—Strothmann considers the appearance of extrasystole during diabetic coma a sign of portentous import. He discusses three cases of this condition in which the patients died from cardiac collapse after the comatose condition had improved. The extrasystole is apparently a sign of particular severe injury of the myocardium.

Thrombosis of Splenic Vein.—Seeber and Spröhnle report a case of thrombosis of the splenic vein in a patient who had been under observation for this condition for twenty-seven years. A diagnosis of hyperplasia of the spleen had been made at first but this diagnosis was later changed to one of Banti's disease. Postmortem examination of the spleen revealed that both these diagnoses were incorrect and that the condition that had eventually caused the death of the patient was thrombosis of the splenic vein.

Relation Between Swelling of Various Tissues Following Ingestion and Their Digestibility.—Von Hoesslin studied the swelling of pieces of muscle, heart, lung, liver, kidney, pancreas and brain under the action of gastric and of pancreatic juice. He found that there was no relation between the degree of swelling of these tissues, which was sometimes very striking, and their digestibility.

Relation Between Basal Metabolism and Respiratory Quotient.—In metabolism studies on human beings, Jahn and Sturm found that a high oxygen consumption value is usually accompanied by a low respiratory quotient.

Kidney Disease in Bone and Joint Tuberculosis.—In a study of forty-three cases of kidney disease due to bone and joint tuberculosis, Simon emphasizes the prognostic importance of the erythrocyte sedimentation test.

Roentgen Treatment of Erythremia.—Hofheinz reports the results he obtained in the roentgen treatment of fourteen cases of erythremia. In twelve of the patients irradiation of the long bones was followed by definite lowering of the erythrocyte count. Five out of eight patients who were kept under observation for two and one-half years remained almost free from subjective symptoms.

Deutsche Zeitschrift für Chirurgie, Leipzig

214: 1-340 (Feb.) 1929

Palliative Resection of Carcinoma of Stomach. W. Anschütz.—p. 1.
Possibility of Clinical Diagnosis of Carcinoma of Stomach. F. von Schnurbein.—p. 20.
Surgical Point of View in Gastric Ulcer and Chronic Gastritis. R. Wanke.—p. 28.
Significance of Anaerobic Bacteria in Perforative Peritonitis Complicating Gastric and Duodenal Ulcer. W. Löhr.—p. 103.
Hydatid Choleperitonitis. W. Anschütz.—p. 135.
*End-Results of 712 Operations for Cholelithiasis. H. Michelsohn.—p. 150.
*Experiences with Magnesium Sulphate Treatment of Acute Diseases of Biliary Passages. H. Junker.—p. 177.
Diverticulum of Colon. H. J. Lauber.—p. 189.
Kidney Tumors in Children. M. Grauhan.—p. 201.
Acid-Base Balance of Blood in Surgical Diseases and Operative Procedures. A. Beck and H. J. Lauber.—p. 235.
So-Called Traumatic Thrombosis of Axillary and Subclavian Veins: Six Cases. W. Löhr.—p. 263.
Periosteal Callus Formation in Fractures of Neck of Femur: Report of Healed Case. K. Lindemann.—p. 300.
Rupture of Peroneal Nerve in Contracted Pes Planovalgus. C. Mau.—p. 319.
Roentgenologic Changes in Spinal Column, Without Clinical Significance. H. J. Lauber and C. Ramm.—p. 329.
Clinical Picture of Arthropathia Ovaripriva. H. J. Lauber.—p. 335.

Results of Operations for Cholelithiasis. — Michelsohn reviews the postoperative results in 712 cases of cholelithiasis. In 422 cholecystectomies the mortality was 3.3 per cent (fourteen deaths). In 258 cholecystectomies with drainage of the biliary passages the mortality was 11 per cent (twenty-eight deaths). In twenty cholecystostomies the mortality was 30 per cent (six deaths). Among three cases complicated by abscess there occurred one death. Among nine other operations—one transduodenal extraction of the stone with cholecystectomy, one choledochoduodenostomy, one choledochusplasty with drainage, one transduodenal hepaticus drainage with cholecystectomy, three operations for separation of adhesions and two other operations—there were four deaths. Sixteen patients were operated on twice. The mortality increased with the age: between 20 and 30, it was 3.9 per cent; between 50 and 60, it was 6.6 per cent; between 60 and 70, it was 20.7 per cent, and between 70 and 80, it was 57.2 per cent. Fifty-one of the 712 patients operated on died, seven following interval operations and forty-four following immediately indicated operations. In sixteen cases death was caused by some factor related to the operation, such as perforation of the portal vein, which caused a septic thrombosis and death; extrusion of drainage tube, leading to septic peritonitis; duodenal fistula causing inanition; postoperative hemorrhages; icterus with subphrenic abscess, and duodenal gangrene. In twelve cases death was caused by the continuance of some complication present before operation. In twelve cases death was indirectly caused by lung embolism, endocarditis, pneumonia and other heart and lung diseases. In six cases death resulted from an intercurrent condition. The author advises conservative treatment, with magnesium sulphate, in all cases as a preparation for later operation. Later reports were received from 380 patients. Five had died. A satisfactory result was obtain in 353 of the remaining 375 cases—94.2 per cent. Age apparently had no influence on the results, but cases in which there was a long period of illness before operation seemed to show better end-results. The time of operation with reference to an acute attack seemed to have no significance. No difference in result referable to the type of operation performed was noted, but it should be mentioned that most of the operations were cholecystectomies.

Magnesium Sulphate Treatment of Acute Diseases of the Biliary Passages.—Junker reports on his experiences with magnesium sulphate in the treatment of 114 cases of cholecystitis and cholelithiasis. The drug was administered partly by means of the duodenal tube and partly by mouth. In a large number of cases it was possible to carry the patient over the acute attack and operate in the interval with excellent result. He says that without such treatment some of these patients would not have survived the operation. In some cases this was most essential, as the patients were suffering from other diseases as well or, because of their age, operation was contraindicated. They recovered without operation. The effect on the liver function after operation was most salutary. The treatment is especially recommended in cases showing postoperative complications.

Jahrbuch für Kinderheilkunde, Berlin

123: 1-110 (Feb.) 1929

*Liver Treatment of Scurvy. H. Aron, H. Hirsch-Kauffmann and E. Schädrich.—p. 1.
Determination of Basal Metabolism of Children. Z. von Bókay.—p. 10.
*High Voltage Roentgen Irradiation in Pulmonary Tuberculosis. Z. von Bókay.—p. 18.
*Typhus in Children. A. A. Koltypin.—p. 27.
*Roentgen Examination of Heart in Children. H. Lehmkuhl.—p. 66.
Atypical Colon Bacilli in Milk Infections. G. Abraham.—p. 80.

Liver Treatment of Scurvy in Guinea-Pigs.—Aron et al. state that fresh beef liver has a marked antiscorbutic effect on guinea-pigs. The antiscorbutic factor may be extracted from the liver with cold water. The daily administration of a quantity of this cold water extract equivalent to 7.5 Gm. of fresh beef liver keeps guinea-pigs healthy for months on a diet which would otherwise certainly result in scurvy. Heating the cold water extract of the liver for five minutes in a boiling water-bath does not appreciably decrease its antiscorbutic action. Alcohol extract of fresh liver and the residue resulting from alcohol extraction do not have any antiscorbutic action. The antiscorbutic property of fresh beef liver and of its cold water extract is doubtless due to its content of vitamin C.

Action of High Voltage Roentgen Irradiation in Certain Forms of Pulmonary Tuberculosis in Children.—According to von Bókay the best results of roentgen irradiation in pulmonary tuberculosis are obtained in cases in which the pathologic process is localized to the hilum of the lung. He does not use this form of treatment in cases in which extensive infiltration is present because he considers it too dangerous. In cases in which the tuberculous infiltration of the lung is localized, he gives from 20 to 50 per cent erythema doses through a 3 mm. aluminum filter at a distance of 30 cm. and with a current of 100,000 volts. The irradiation is repeated every four weeks until from three to five treatments have been given. In cases in which the infiltration is more extensive the dose is decreased and only a small area of the lung is irradiated.

The author used this form of treatment in twenty-nine cases of pulmonary tuberculosis in children. During the first twenty-four hours following the irradiation a slight rise in temperature, weakness, and an intensification of the tuberculous process were noted in a few cases, but these symptoms disappeared as a rule in from forty-eight to seventy-two hours. In many of the cases the temperature fell to normal after the first treatment; in the other cases this occurred after the second treatment. The drop in temperature was accompanied by an improvement in the children's appetite, turgor, color and general condition. Roentgen examination of the lungs demonstrated that in most of the cases only three treatments at intervals of four weeks were required to produce complete healing; in only exceptional cases was a fourth or a fifth treatment necessary. The author emphasizes the economic significance of this form of treatment which does not necessitate prolonged residence in a hospital.

Typhus in Children.—In 600 cases of typhus in children observed at Moscow during the 1919-1920 epidemic, Koltypin noted complications in 109, or 18.1 per cent, of the cases. The most common complications were bronchitis (thirty-six cases); intestinal disorders (twelve); otitis media (six), and deafness (five). Only one of the 600 patients died; the child had just recovered from recurrent fever and the author thinks that death might have been due to a mixed infection.

Roentgen Examination of Heart in Children.—Lehmkuhl describes his technic for measuring the size of the heart in children, compares the results of his determinations with the results obtained by other investigators, and gives a table in which the dimensions of the hearts of children varying in age from 2 months to 14 years are recorded.

Klinische Wochenschrift, Berlin

8: 289-336 (Feb. 12) 1929

*Insufficiency of Circulation in Relation to Muscle Metabolism. K. Dresel and F. Himmelweit.—p. 294.
Application of Capillary Microscopy According to Jaensch-Hoepfner-Wittneben. H. Brieger.—p. 296.
Rhythmic Tone Fluctuation as Symptom of Abnormal Pulsation in Lesser Circulation. E. Schliephake.—p. 299
*Effects of Insulin on Lipochromemia and on Xanthosis Diabetica A. W. Elmer and M. Scheps.—p. 300.
Increase of Soft Chancre and Decrease of Scabies. A. Buschke and F. Spanier.—p. 302.
Complement Fixation in Gonorrhea: Technic. W. Freudenthal, M. Fischer and M. Stern.—p. 303.
*Urticaria Caused by Exposure to Cold. E. Lehner.—p. 306.
Pathogenesis and Resorption of Transudates and Exudates in Pleura. P. Iversen and E. H. Johansen.—p. 309.
Origin of Leukocytes in Inflammations. B. Fischer-Wasels.—p. 310.
Physical Therapy Equipment of Modern Hospitals. Grober.—p. 318.

Insufficiency of Circulation in Relation to Muscle Metabolism.—Dresel and Himmelweit made tests on healthy persons and on patients with circulatory disturbances. They determined the lactic acid content in the vein of the arm before as well as after exercise. The investigation proved that normal persons are capable of either oxidizing or resynthesizing the lactic acid which is formed in the muscle. Patients with circulatory disturbances are not able to supply sufficient oxygen during this exertion to effect oxidation. The patient with exophthalmic goiter has a sufficient supply of oxygen while resting. During exertion, however, either the supply of oxygen is not adequate or the oxidation capacity of the muscle cell is deficient. The patient suffering from myasthenia has a normal circulation but the muscle cells cannot adequately utilize the oxygen.

Effects of Insulin on Lipochromemia and on Xanthosis Diabetica.—Experiments made by Elmer and Scheps concerning the effects of insulin on lipochromemia and on xanthosis diabetica proved that insulin influences the lipochrome metabolism. It produces a lowering of the lipochrome content in the blood and prevents coloration of the skin. Cases of xanthosis diabetica which cannot be influenced by a diet deficient in lipochrome should be treated with insulin. A combination of insulin treatment with a diet deficient in lipochrome gives the best results.

Urticaria Caused by Exposure to Cold.—Lehner reports a case of urticaria in a man, aged 23, who had been bathing in cold water. Suddenly he complained of headache, chills and a burning sensation in the skin, and when taken from the water he was almost unconscious. After that his skin became reddened and swollen, and itched. Otherwise the patient was in good health. If his skin was touched with ice or ice-water the area became red, itchy and swollen. A piece of ice taken into the mouth likewise caused wheals on the palate and on the tongue. Lehner succeeded in making the patient less sensitive by repeated applications of ice to large areas of the body. Tests with the serum of the patient showed that after repeated ice applications the blood gradually developed a substance which counteracted the inflammatory sensibility.

Medizinische Klinik, Berlin

25: 173-212 (Feb. 1) 1929

Pathologico-Anatomic Aspects of Pulmonary Tuberculosis in Adults. H. Loeschcke.—p. 173.
Pulmonary Tuberculosis in Adults. Harms.—p. 176.
Constitutional Aspects of Nervous Hypotonia. F. W. Stein.—p. 180.
*Formation of Gallstone in Stump of Cystic Duct Following Cholecystectomy. T. Walzberg.—p. 184.
Conduction Disturbances in Auricle of Heart. W. Dressler.—p. 185.
*Genesis of Apoplexy Illustrated in Case of Lead Poisoning. A. Rühl.—p. 187.
Muscular Rheumatism and Massage: I. Diagnosis and Treatment of Rheumatic Hardening of Muscles. W. Ruhmann.—p. 189. C'cn.
Latent Gonorrhea. Levy-Lenz.—p. 193.
Determination of Blood Groups and Agglutination Anemia. C. S. Engel.—p. 193.
Modern Treatment of Skin, and of Urinary and Venereal Diseases. H. Colman.—p. 194.
Treatment of Dysmenorrhea. W. Liepmann.—p. 195.

Formation of Gallstone in Stump of Cystic Duct Following Cholecystectomy.—Walzberg performed a cholecystectomy in a woman, aged 62. For five years following the operation the patient was free from pain. After that, however, she had repeated attacks of colic. Hot applications gave relief, but two years later the pain appeared again with increased severity, so that surgical intervention was necessary. The operation revealed that the remaining part of the cystic duct had formed a new gallbladder and inside of it was found a stone of considerable size. The patient recovered quickly and has since been in good health.

Genesis of Apoplexy Illustrated in Case of Lead Poisoning.—A case of apoplexy is reported by Rühl. A man, aged 51, who, as a painter, had been working with paints containing lead for thirty-seven years, suffered from attacks of apoplexy. Fifteen years previously he had been ill with lead poisoning. Nine years later he had a slight cerebral hemorrhage, and for the last two years cerebral disturbances had been noticed. The attacks became more frequent and the patient was brought to the clinic. The most evident psychic symptoms were weakness of memory and slow speech. Somatic hypertonia and hypertrophy were observed. Clinical examination revealed lead in the urine. The Wassermann reaction was negative. In the course of the disease the blood pressure increased markedly and neither venesection nor lumbar puncture had any influence on it. The cerebral disturbances became more serious and the patient died. Postmortem examination revealed hypertonic sclerosis of the arteries, hypertrophy of the left ventricle and of the aorta, and contracted kidneys. On the brain surface were found a large apoplectic hemorrhage and several smaller bleeding centers, together with numerous areas of softening. The condition of the brain as revealed microscopically proved that the apoplexy was caused by arteriosclerosis, which in turn was due to lead poisoning.

Monatsschrift für Kinderheilkunde, Leipzig

42: 513-576 (Feb.) 1929

*Unusual Case of Hereditary Pemphigus. K. H. Kuse.—p. 513.
Secretion of Mammary Gland of Infants. K. Jaroschka.—p. 523.
*Striae in Eyes of Young Infants. K. Jaroschka.—p. 528.
Encephalitis Following Vaccination. E. Walenta.—p. 530.

Unusual Case of Hereditary Pemphigus.—Kuse reports a case of hereditary pemphigus in a boy, aged 5 months, who had had a bullous eruption since birth. The nails were inflamed and the bullae spread over his whole body. The family anamnesis revealed that a nephew of the mother had had, immediately after birth, a vesicular eruption which soon disappeared and did not recur. The first child born to these parents showed the same disease after birth, but died soon of pneumonia. In the present case, the child was normally developed and showed

no pathologic disturbances except the pemphigus, which covered one side of his nose, the ears, the abdomen and the back. The terminal phalanges of the hands and feet were swollen and the fingers and toes had no nails; in the nail beds were suppurating crusts which bled easily. Contrary to all cases reported in which recovery occurred within seven days, this child had suffered from pemphigus for five months and no improvement followed treatment. The child developed well but the ulcerations increased, finally attacking the mucosa, destroying cartilage, bones and nails, and eventually ending in death.

Striae in Eyes of Young Infants.—Jaroschka describes a condition which he says has not been reported before: the eyes of young infants often show circular striae running parallel to the limbus cornae, sometimes on the temporal, sometimes on the nasal side, varying in number and clearness, and interrupting the continuity of the sclera and the conjunctiva. These striae are particularly noticeable in the first two weeks of life; they disappear after the third month. They are milky white and about 2 mm. from the corneal border. The first stria is followed by a second and sometimes a third one. Looking sidewise, one may perceive a slight elevation corresponding to the stria. In several cases the author observed that hemorrhages of the conjunctiva, following birth trauma, stopped at those lines. Ebschnig considers them to be the beginning of lateral eye muscles which shine through the delicate infantile conjunctiva. At a more advanced age, the conjuctiva loses its transparency and the lines disappear. They were observed in from 70 to 80 per cent of the infants examined.

Münchener medizinische Wochenschrift, Munich

76: 185-224 (Feb. 1) 1929

Cerebrospinal Fluid in Relation to Skin Diseases. W. Schönfeld.—p. 185.
*Effect of Ultraviolet Rays in Conjunction with Antisyphilitic Treatment. W. Richter.—p. 189.
*Arteriosclerosis as Sequel of Continued Suppression of Function of Nerves Which Control Blood Pressure. H. E. Hering.—p. 191.
Intracutaneous Smallpox Vaccination. F. Gierthmühlen.—p. 194.
Anaphylaxis From Formation of Iso-Antibodies Following Repeated Transfusions of Homologous Paternal Blood. P. György and E. Witebsky.—p. 195.
Purulent Complications of Dengue. E. Kondoleon and G. Joannides.—p. 197.
Microscopic Changes in Capillary in Erythrocyanosis Crurum. L. Nielsen.—p. 198.
Acute Hemorrhagic Necrosis of Pancreas in Child, Aged Two. E. Herzog.—p. 200.
Legal Aspects of Puerperal Eclampsia Following Mistreatment. Kunz.—p. 201.
*New Method of Qualitative and Quantitative Determination of Sugar Content of Urine. D. Morck.—p. 201.

Effect of Ultraviolet Rays on Antisyphilitic Treatment.—Richter observed that exposure to sunshine and the resulting sunburn caused serious complications in patients receiving antisyphilitic treatment. He gives a detailed description of three cases. On the basis of his observations he concludes that in cases of sunburn antisyphilitic treatment should be discontinued because the ultraviolet rays cause harmful changes in the skin. They paralyze important biologic and metabolic functions which are essential for the chemotherapeutic effects of neoarsphenamine. If, as a result of the sunburn, the skin does not function properly, intravenous neoarsphenamine injections frequently cause a toxic reaction. In order to avoid this toxicity the author gave intramuscular injections of small doses of neoarsphenamine.

Arteriosclerosis as Sequel of Continued Suppression of Function of Nerves Which Control Blood Pressure.—Hering asserts that the nerves of the aortic and auricular sinus control the blood pressure. If their activity is suppressed the blood pressure increases. The author describes experiments on rabbits which proved that the continued suppression of these nerves leads to arteriosclerosis.

New Method of Qualitative and Quantitative Determination of Sugar Content in Urine.—Morck describes a new method to determine the sugar content of the urine. As reagent he employs *o*-nitrophenyl propiolic acid dissolved in an alkaline solution. The quantitative determination gives accurate results and requires little time, so that it can be applied by the general practitioner. To make the qualitative and quantitative tests more exact, standard color specimens can be used for comparison.

Wiener klinische Wochenschrift, Vienna

42: 161-192 (Feb. 7) 1929

Methods and Aims of Physiologic and Chemical Researches. O. Fürth.—p. 161.
Comparison Between Stock B C G and Fixed Virus. F. Schweinburg.—p. 164.
Experimental Studies on Cancer. B. E. Brüda.—p. 166.
Differentiation of Rat-Killing Bacteria from Bacterium Enteritidis Gärtner. H. David.—p. 167.
Emergency Operations for Intestinal Disorders. J. Schnitzler.—p. 173.
*Diagnosis and Treatment of Tuberculosis of Larynx. E. Wessely.—p. 176.
Pathogenesis of Infectious Rheumatism. R. Lenz.—p. 178. C'cn.
Ambulatory and Institutional Treatment of Pneumothorax. E. Pick.—p. 180.

Diagnosis and Treatment of Tuberculosis of Larynx.—Wessely reports that of 715 patients with tuberculosis of the larynx 503 were men and 212 women. The incidence is greater among women employed in the industries. Forty per cent of the patient were less than 20 years of age; 11 per cent were over 50. Wessely advises injection of the glossopharyngeal nerve with alcohol or resection of a portion of it. He also states that in some cases of dysphagia, electrocoagulation of the ulceration has been helpful. In some instances a beneficial influence was noted from exposure to natural and artificial sunlight and quartz lamp irradiation. For dyspnea Wessely advises tracheotomy and for the ulcers, application of lactic acid. In a number of cases diathermy treatments have proved helpful.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

94: 553-870 (Feb. 1) 1929

*Functional Antagonism Between Suprarenals and Ovaries. F. Siegert.—p. 553.
Chemical Suppression of Function of Sympathetic Nervous System. E. Vogt.—p. 618.
*Kidney Function in Pregnancy and in Puerperium. H. Kamniker.—p. 622.
*Urethral Prolapse in Women. H. Säuferlin.—p. 630.
Preliminary Excision and Enucleation of Myomas to Facilitate Abdominal Hysterectomy. H. Sellheim.—p. 690.
Leiomyoma of Ovary. A. Bär.—p. 702.
Tar Cysts of Ovary. F. Isbruch.—p. 710.
Manual Dilation of Cervix During Labor. A. W. Bauer.—p. 720.
Cesarean Section in Moribund and in Dead Women. H. O. Neumann.—p. 749.
Clinical Significance of Fibromyomas of Uterus. A. von Fekete.—p. 765.
Malignant Chorion Epithelioma. J. Granzow.—p. 775.
Pathogenesis of Icterus Neonatorum. W. G. Schultz.—p. 793.
Cyst Formations in Female Genital Tract. E. von Zalewski.—p. 808.

Functional Antagonism Between Suprarenals and Ovaries.—In experiments on guinea-pigs Siegert found that the epinephrine content of the suprarenals is subject to demonstrable physiologic variations. These variations parallel the rut phenomena: the epinephrine content of the suprarenals decreases during estrum and increases during diestrum. After removal of both ovaries the epinephrine content of the suprarenals remains constantly at a point between the estrual and the diestrual values. Weak roentgen irradiation of the ovaries produces a decrease in the epinephrine content of the suprarenals, whereas intense irradiation produces an increase. From these facts the author concludes that the physiologic variations in the epinephrine content of the suprarenals are the result of the parasympathicotonic property of the ovarian hormone. By stimulation of the splanchnic nerves the ovarian hormone causes an increased secretion of epinephrine. The phenomena of rut persist when the maturation of the ovum is arrested, but disappear when the cells of the theca interna are removed surgically or are destroyed by roentgen irradiation. In other experiments to determine the effect of epinephrine on the phenomena of rut, Siegert found that: 1. Synthetic epinephrine has no effect. 2. Fresh suprarenal extract inhibits the phenomena. 3. The implantation of fresh suprarenal tissue likewise produces a diminution in the phenomena. 4. Removal of one or both suprarenals has no effect on the regular course of rut. A consideration of these facts leads Siegert to the conclusion that the suprarenals and the ovaries exert an antagonistic regulatory action on each other.

Kidney Function in Pregnancy and in Puerperium.—In kidney function determinations in which the indigocarmine test was used, Kamniker found that a marked retardation of the excretion on one side was present in 50 per cent of all apparently healthy, pregnant women. In pregnant women with ureteral pain this percentage rose to more than 60 per cent, and in pregnant women with pyelitis it rose to more than 90 per cent.

The retardation is caused by stasis in the ureter; the urine is secreted almost normally by the kidney but is retained in the dilated ureter. The stasis has an effect on the peristalsis also, which shows marked irregularities, and on the function of the kidney, since the urine on the involved side is concentrated more slowly. In almost all cases of retarded elimination of the dye dilatation of the ureter could be demonstrated roentgenologically. The author states that if this dilatation disappears following treatment or labor, the injury of the kidney is inconsequential. The pain which appears so frequently in the one flank, usually the right, of pregnant women whose urine is normal constitutes, together with sensitiveness of the involved ureter to pressure, a definite clinical picture characterized functionally by retarded elimination of indigocarmine and anatomically by dilatation and kinking of the ureter.

Urethral Prolapse in Women.—Säuferlin reports two cases of early prolapse and four cases of advanced prolapse of the female urethra which occurred in 16,000 gynecologic patients, and discusses the various methods proposed for its correction.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

118: 489-644 (Feb. 11) 1929

Pathogenesis of Progressive Lipodystrophy. E. K. Ewserowa.—p. 429.
*Epilepsy in Munich. I. Guttmann.—p. 500.
Histochemistry of Kanzler's Method for Staining Spirochaeta Pallida in Frozen Sections: Modification of Method. H. Kufs.—p. 516.
Changes in Cerebral Arteries, Especially After Poisoning. E. Brack.—p. 526.
Anatomy and Physiology of Nervous System in Anencephalia. G. Sokolansky.—p. 532.
Innervation of Thyroid Gland. L. Pines.—p. 552.
Relations of Blood-Spinal Fluid Barrier to General Metabolism. Nippert.—p. 562.
"Schizophrene" Psychosis in Metencephalitis. E. Guttmann.—p. 575.
Rorschach's Test: Difficulties and Results. M. Müller.—p. 598.
Peculiar Effects of Phenobarbital in Epilepsy. J. M. Kogan and L. A. Mirelson.—p. 621.
Psychology of Division of Attention ("Aufmerksamkeitsspaltung") in Constitutional Types. W. Enke and L. Heising.—p. 634.

Epilepsy in Munich.—Guttmann collected statistics on 942 epileptic patients (614 men and 328 women). During the same period 22,968 patients (12,773 men and 10,195 women) were treated at the Munich clinic. From 1904 to 1922, the number of single admissions of the 942 epileptic patients was 1,640, comprising 1,087 men and 553 women, while the total admissions amounted to 32,443 during the same period, comprising 18,549 men and 13,894 women. During that time, the number of men was 5.86 per cent, that of women 3.98 per cent, of the total admissions. More than two thirds of all patients came to the hospital once, one sixth, twice; the rest came more frequently. About 15 per cent were more than 40 years of age, while nearly two thirds were not yet 30; only one fifth of the patients were aged less than 5. The manifestations occurred in two thirds before the twentieth year and in six sevenths before the thirtieth year, while after that age, 15 per cent became epileptic. According to several tables, there are from 30 to 40 per cent of deaths at all ages. In earlier life, death is caused by epilepsy more frequently than in later life, when other fatal diseases appear. Among the 614 men, 373 are still living, but only a few gave detailed information: Eighty-five have been confined to institutions on account of fits, states of dozing, and increasing idiocy; only three among them had to be confined for criminal deeds; 218, i. e., 69.7 per cent of the epileptic patients, are free. Seventeen among them are idiots; ten are vagabonds, and 138 are working, being only slightly disturbed by their disease, which does not prevent them from taking care of themselves and their families. Information is missing in twenty-four cases. Twenty-nine patients declared themselves to be completely well having had fits only once, or transient attacks due to some other cause. Among the 201 women, fifteen remained without giving information; fifty-five are in asylums. One hundred and twenty-five, i. e., 67.2 per cent, are living outside. Nine of them are idiots; eighty seem to be able to take care of themselves and their household; thirteen are said to be all right. Among 328 women, 120 were married; sixty-nine are living, forty-four are dead, and in seven the condition is unknown; among the living, thirty-nine are more than 40 years old. Seventy-nine have 251 children; six have none, and thirty-six gave no information. Among 614 men, 200 were married, among whom 132 are living and sixty-eight are dead; fifty-six among the living are more than 50 years of age. Fifty-seven have 140 children; twenty-five have no children, and 118 did not respond to the inquiry. Epileptic diseases seem to have diminished in men on account of the lack of alcohol during the war; it seems that those in women have increased. Epilepsy seems to reduce the length of life.

Zeitschrift für Urologie, Leipzig

23: 1-80, 1929. Partial Index

*Cystic Tumors of Kidney. M. Jacoby.—p. 1.
Estimation of Coefficient for Polyuria and Concentration. E. M. Sienkiewicz.—p. 5.
High Transperitoneal Suprapubic Cystotomy. P. Ssolowoff.—p. 15.
Pyelonephritis Caused by Ureterovaginal Fistula. A. Matusovszky.—p. 30.
Alexeieff-Schramm's Symptom in Diagnosis of Nervous Diseases. G. S. Epstein, A. S. Juschelevsky and J. D. Michelson.—p. 35.

Cystic Tumors of Kidney.—Jacoby reports a case of multilocular cyst of the kidney, a condition, according to statistics, which was recognized in only four out of fifty-eight cases previous to operation. A woman, aged 51, had in the abdomen a swelling the size of a child's head, without protuberances or demonstrable fluctuation. Palpation suggested an enlarged organ, but pyelography revealed a tumor of the left kidney. The right kidney was normal, and the author therefore removed the left kidney. The lower part of the excised organ was occupied by a cystic tumor several times the size of the normal kidney. It consisted of several cysts varying in size from that of a prune to that of an apple, with a large number of smaller cysts between them. The structure suggested a cystic kidney similar to the one reported by Israel.

23: 81-160, 1929. Partial Index

Urethral Hemorrhage: Pathology and Therapy. A. Glingar.—p. 81.
Blood Immunization Against Gonococci in Vitro. N. I. Baschkirzev.—p. 92.
Supernumerary Ureter with Extravesical Opening in Women. S. Perlmann.—p. 100.
Chronic Gonorrheal Cowperitis. H. Riem.—p. 111.
*New Method for Estimation of Albumin. F. Spanier.—p. 115.
*Prostatic Abscess in Boy, Aged Two and One Half Years. D. Szenkier.—p. 119.

New Method for Estimation of Albumin.—With Spanier's method the undiluted urine is floated on several dilutions of the reagent, until a ring appears at the junction of the two fluids exactly at the end of two minutes. The author employed Spiegler's reagent as modified by Jolles, which contains mercuric chloride, 10 Gm.; citric acid and sodium chloride, 20 Gm. each, and distilled water, 500 cc. First, the presence or absence of albumin in the urine is ascertained and, if it is present, the quantity is determined approximately by other methods. The greater the amount of albumin present, the higher the dilutions of the reagents to be used. Ten drops of this solution are poured into a small test tube, then the undiluted, filtered urine is acidified with 30 per cent acetic acid solution. If a ring is not formed between the two liquids at the end of two minutes, the procedure has to be continued. If the ring appears before that time, the urine is poured on weaker solutions or vice versa until the ring is formed exactly after two minutes. The important point in the procedure is that the reagent and not the urine is diluted.

Prostatic Abscess in Boy, Aged Two and One-Half Years.—Szenkier reports a case of prostatic abscess in a child, aged 2½, who three months previously had recovered from typhoid, which the author regards as a possible etiologic factor in this case. The case is unique on account of the age of the patient and the fact that it seems to be the first on record in so young a patient.

Zentralblatt für Chirurgie, Leipzig

56: 257-320 (Feb. 2) 1929

Treatment of Intussusception in Children. E. Melchior.—p. 258.
Intrathoracic Sympathicoblastoma. H. Nieden.—p. 266.
Successful Extraction of Teeth in Hemophilia. E. Schrader.—p. 271.
New Operating Room. W. Bäcker.—p. 274.
Treatment of Fractures by Open Operation. V. Novák.—p. 279.
*Operation for Rectal Fistula. S. Wideröe.—p. 284.

Operation for Rectal Fistula.—Wideröe incises the mucous membrane of the rectum longitudinally so as to include the inner opening of the fistula; then he dissects free two flaps down to the anus. The fistulous opening is closed with a

purse-string suture and the mucous membrane flaps are sutured back into place, thus effectively closing the fistulous opening. In six cases in which this procedure was carried out, the result was perfect healing.

56: 321-384 (Feb. 9) 1929

Intraperitoneal Lipoma Simulating Chronic Appendicitis. C. T. Willich. —p. 323.
*Volvulus of Appendix. E. Staude.—p. 324.
*Lengthening Lower Extremity: Five Methods. S. D. Chachutow.—p. 325.
Disinfection of Hands Before Operation. B. Ulrichs.—p. 335.

Volvulus of Appendix.—Staude reports a case in which the symptoms manifested led to the diagnosis of acute appendicitis. At operation, the appendix, 8 cm. long, was hanging free down in the pelvis but completely rotated on its axis, and was edematous and congested. It had a very long mesentery and its lumen was completely filled with feces. The author concludes that the contents were the cause of the volvulus which the long mesentery made possible, and that a sudden movement of the patient was the actual inciting factor.

Lengthening the Femur.—Chachutow describes five methods of lengthening the lower extremity: When a fracture with misplacement of the fragments is the cause of the shortening, he performs the so-called sliding operation, making use of the callus to secure the desired lengthening. A pathologic shortening is overcome by bone transplantation into the marrow cavity; by the sliding operation; by a doubling of the head of the femur, consisting in division of the neck of the femur close to the shaft of the bone and fixing of the greater trochanter under the head of the femur, and, finally, by making an intertrochanteric osteotomy. In the latter operation, the femur is divided by transverse section immediately below the trochanteric zone, making a wedge shaped excision between the two trochanters. The lower end of the bone is placed in an abducted position, so that the top of the wedge impinges against the inner limb of the inverted V in the head segment of the bone.

Zentralblatt für Gynäkologie, Leipzig

53: 257-320 (Feb. 2) 1929

*Hysteroscopic Examination of Endometrium. F. von Mikulicz-Radecki. —p. 258.
Social Factors Influencing Labor. H. Küstner.—p. 264.
Protracted Gestation. J. Frigyesi and H. Sellheim.—p. 269.
*Fatal Intracranial Hemorrhage Following External Version. H. Naujoks. —p. 270.
*Comparison Between Surgical and Radiologic Treatment of Cancer of Uterus. G. Lundh.—p. 281.
*Prolapse of Retroflexed, Three or Four Months Gravid, Incarcerated Uterus. M. Henkel.—p. 287.
Coition Rupture of Posterior Wall of Vagina. R. Falk.—p. 288.
*Avulsion of Anterior Lip of Cervix Following Administration of a Pituitary Preparation. E. Schwarzkopf.—p. 290.
*Effect of Artificial Abortion on Subsequent Labor. X. Bronnikowa.—p. 292.

Hysteroscopic Examination of Endometrium.—Von Mikulicz-Radecki was able to demonstrate pathologic changes in the endometrium in almost all of 100 patients with uterine bleeding whom he examined hysteroscopically. The conditions most commonly found were hyperplasia and atrophy. Isolated bleeding vessels were nearly always found together with distended vessels; the author believes, therefore, that the uterine hemorrhage in these cases is due to changes in the blood vessels of the endometrium. He has also succeeded in sterilizing animals by the electrocoagulation of the intramural portions of the oviducts through the hysteroscope. He believes, however, that more experimental work must be done before this method can be applied to the sterilization of women.

Fatal Intracranial Hemorrhage of Child Following External Version.—Naujoks reports a case of fatal intracranial hemorrhage of the fetus following external version, which was so difficult that it necessitated the use of anesthesia and great force. The patient had had four spontaneous labors and came to the clinic with only slight labor pains and intact membranes and with the history that her physician had made a diagnosis of a transverse position and had attempted external version under anesthesia, without success. At the clinic the diagnosis was confirmed and external version without anesthesia was attempted; difficulty was experienced in turning the fetus, however, and the mother was anesthetized. The fetal heart tones were normal before the version under anesthesia. Even with the exertion of great force on the head and the breech, the fetus could be only incompletely turned. Almost immediately after the partial version the fetal heart tones became inaudible. Internal version and extraction were performed at once but the child was dead. The author assumed that the death of the fetus had been caused by compression of the umbilical cord, but at necropsy such a large intracranial hemorrhage was found that it was evident that this was the true cause of death. As a result of this experience the author believes that when difficulty is experienced in performing external version under anesthesia, internal version should not be deferred until it can no longer be performed with safety.

Comparison Between Results Obtained by Surgical and by Radiologic Treatment of Cancer of Uterus.—In a comparison of the results obtained by the surgical treatment of fifty-seven cases of cancer of the uterus and by the radiologic treatment of forty-seven cases, Lundh found that the type of treatment had little effect on the final result. Everything seemed to depend on treating the patient early enough.

Prolapse of Retroflexed, Three or Four Months Gravid, Incarcerated Uterus.—Henkel reports a case of prolapse of a retroflexed, three or four months gravid, incarcerated uterus through an area of necrosis in the vagina of a woman who had given birth to nine children. The entire uterus together with the oviducts lay in front of the vulva. Immediate extirpation of the uterus was followed by uneventful recovery of the patient.

Avulsion of the Anterior Lip of Cervix Following Injection of a Pituitary Preparation.—Before the administration of a pituitary preparation to intensify uterine contractions in a woman with a narrow pelvis, Schwarzkopf recommends that an examination be made to determine the position of the anterior lip of the uterus. If it lies between the head of the fetus and the symphysis and is not pushed backward either rectally or vaginally and held in place until a few strong contractions have forced the head into the lower segment of the pelvis, a portion of it may be so compressed against the symphysis that it may be necessary to remove the entire lip. He reports a case in which this precaution was not observed, with the result that a piece of the anterior lip measuring 6.5 by 3.5 by 2.5 cm. had to be excised.

Effect of Artificial Abortion on Subsequent Labor.—In a comparison of the labors of 717 primiparas who did not give a history of previous abortion and of 653 primiparas who did, Bronnikowa found that the percentage of pathologic labor in the former was 6.8, whereas in the latter it was 13.8. He states that even when abortion is not followed by visible complications, it always has an unfavorable effect on subsequent pregnancies.

Nederlandsch Tijdschrift voor Geneeskunde, Leyden

73: 809-896 (Feb. 16) 1929. Partial Index

*Psychologic Aspects of Dementia. E. D. Wiersma.—p. 811.

Psychologic Aspects of Dementia.—Wiersma differentiates paretic dementia from senile dementia. Paretic dementia is less systematized and has a more general character. Apprehension, memory, judgment, the emotions and the will are affected. The patients are less anxious about their condition and seek no medical assistance since they lack judgment. The onset of the condition is marked by an impairment of the mutual relation of the psychic functions. The limitation of the associative power of the mind, which is manifested to some extent in every psychic field, gives to dementia its diffuse character. Reproduction (used in the psychologic sense) is disturbed, so that many associative ideas, whereby memory of details is commonly reinforced, do not rise to consciousness. For instance, the memory of a definite person is often normally furthered by the presence of a third person who bears a certain relation to that person, or by surroundings in which that person has often been seen. Whenever, therefore, certain associative ideas are lost, as is the case in paresis, memory is rendered thereby more difficult. Likewise, egoistic character changes, such as excitability, self gratification and criminal tendencies (theft, moral delinquencies), come strongly into the foreground. Slowly, the child substitutes altruistic for egoistic tendencies, and there arise a sense of duty, interest in ideals, thought for others, and a community feeling. This development of the normal character is now lost, since altruistic thoughts can no longer be awakened.

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